

RAILWAY

# TRACK *and* STRUCTURES

This Issue...

Machines Speed  
Line Change

Qualifications for  
Track Foremen

Blower for  
Switches

Station Is  
Modernized

Contents -- Page 547



## "My small gang lays 750 foot 'RIBBONRAIL' FAST"

The small gang of trackmen shown in the picture is laying 10½ miles of "Ribbonrail" (564 and 750 ft. lengths) using two *Meco Power Rail Layers*.

These two *Meco Power Rail Layers* place the "Ribbonrail" on the ties in position for spiking, thus making a great reduction in labor, time, and Rail-Relaying costs. Lays rails of every weight and length.

Many railroads are speeding up relaying with *Meco Type C Rail Layers*, greatly reducing rail handling and relaying costs.

...using  
**two MECO POWER  
RAIL LAYERS**

### OTHER MECO LABOR SAVING PRODUCTS

- Mack Switch Point Protector (Prolongs Switch Rail Life)
- Meco Curve Rail Lubricator (Decreases Curve-Rail Friction)
- Ryd-In Automatic Coupler (Couples Trailers to Motor Cars)

Maintenance Equipment Company



*Ahead on  
maintenance work schedules*

**with RELIANCE HY-PRESSURE**

**HY-CROME  
spring washers**

**M**AN HOURS are reduced for maintenance crews working a section of track equipped with Reliance Hy-Pressure Hy-Crome spring washers. They are designed and manufactured to possess those inherent qualities necessary for keeping track joints tighter longer by providing continuous non-fatiguing calibrated reactive pressure with a wide reactive range. The special analysis alloy spring steel helps keep joint bolts under constant tension, automatically compensating for inevitable developed looseness as a result of wear in the bolted parts. Reliance Hy-Pressure Hy-Crome spring washers save railroads maintenance costs from the time of installation.

Our railway fastening engineers will give you complete details and provide highly interesting information about using Reliance Hy-Crome spring washers as time and money savers. A letter from you today will bring information without obligation.



**"Edgemark of Quality"**



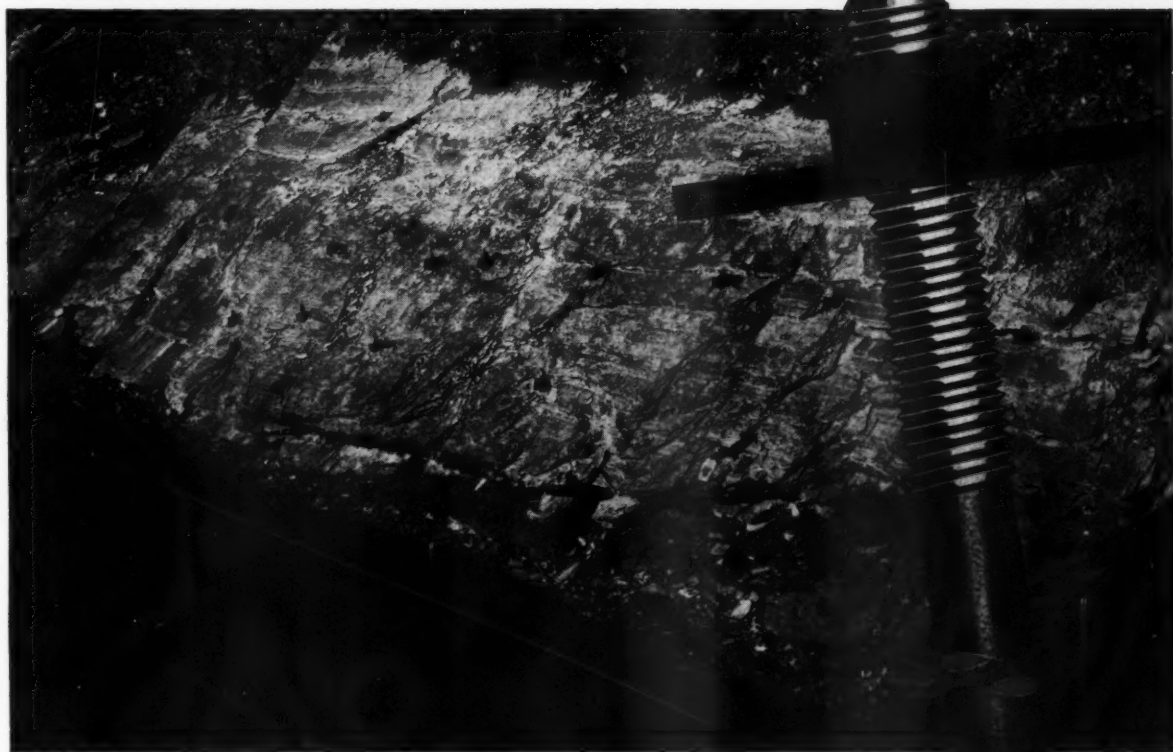
**MANUFACTURING COMPANY, RELIANCE DIVISION**

**OFFICE AND PLANTS • MASSILLON, OHIO**  
SALES OFFICES: NEW YORK • CLEVELAND • DETROIT • CHICAGO • ST. LOUIS  
SAN FRANCISCO • MONTREAL



# TO PREVENT ROCK SLIDES

*This installation of Bethlehem Rock Anchor Bolts along right-of-way saved the handling of many tons of material.*



There's no point to trusting to luck, in the hope that rock slides won't occur along your right-of-way. In many locations, you can prevent rock slides by using Bethlehem Rock Anchor Bolts.

As their name implies, Bethlehem Rock Anchor Bolts act in shear to resist slippage of strata, at the same time effectively bolting together various layers of rock. They stabilize the slope, and serve as cribbing to prevent additional slides from above. They can also be used to anchor individual boulders to bedrock, preventing movement.

Bethlehem Rock Anchor Bolts are 29/32 in. in diameter, and come in lengths of from 2 ft to 10 ft. One end of the bolt has 5 in. of 1-in. rolled threads. The other end has a 6-in. slot, made by an exclusive forging process which forms the equivalent of two half-rounds. The slot accommodates a wedge, which spreads the bolt-ends in the hole, to provide a tight fit. The bolt can be driven with your present equipment.

These bolts are furnished with an American Standard square nut. They can be installed horizontally or at an angle, and can be used with either a plate or angle washer.

If you have a difficult rock condition, there's a good chance that Bethlehem Rock Anchor Bolts may be the answer. Why not tell us about it? A query addressed to us at Bethlehem, Pa., will bring you prompt information.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

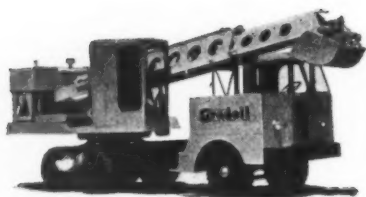
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation



## BETHLEHEM ROCK ANCHOR BOLTS

Published monthly by Simmons-Boardman Publishing Corporation, 79 W. Monroe St., Chicago 3, Ill. Subscription price: United States and Possessions, and Canada, one year \$2.00 (special rate to railroad employees only, one year \$1.00). Single copies 50 cents. Entered as second-class matter January 20, 1933, at the post office at Chicago, Ill., under the act of March 3, 1879, with additional entry at Bristol, Conn. Volume 49, No. 6.





**With the multi-purpose Gradall  
you can do it...**



## **BETTER...**

Yes, the Gradall operator has such complete control of the telescoping boom and wrist-like action of the tool that jobs are not only done better, but often to hand finish "specs". Here the Gradall's positive down pressure enables the operator to dig small holes—deep and neat—and a straight, narrow trench, ready for pouring foundation footings without any additional forms. Such accurate work is not confined to the "wide open spaces", because the Gradall works in many tight places, even inside buildings, completely inaccessible to other machines.



## **FASTER...**

Where other machines falter, the Gradall's speedy arm-action and positive down pressure really go to work! For instance, in ripping asphalt pavement one attachment scores the pavement. Then with a second attachment the Gradall removes large chunks, swinging around to load into trucks—all in one pass. Pavement is removed right down to the sub-surface, eliminating clean-up hand labor. Similarly, it removes grouted brick so smoothly that most of the brick can be reclaimed.



## **FOR LESS...**

When one machine can replace several machines, or as many as 40 hand laborers—and do the job better and faster—savings are bound to mount! A quick, easy change of attachments makes the Gradall an entirely "new" machine, enabling it to often do all of the phases of a complex job. On the job illustrated, it cut this slope to the exact desired angle, dug ditches for drains, and handled other work accurately and fast—without hand labor. Yes, the Gradall is a cost-cutter on all kinds of jobs!

*Find out how a Gradall can cut costs for you! Contact your Gradall Distributor for a field demonstration.*

**Gradall Distributors in over 75 principal cities  
in the United States and Canada**

**Gradall**

DIVISION OF

**WARNER  
&  
SWASEY**  
Cleveland  
PRECISION  
MACHINERY  
SINCE 1895

**YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY**



# Raising the Roadbed

**HIGH AND DRY RIGHT-OF-WAY.** Banking and grading nearing completion, International's TD-6 levels the new flood-free roadbed.



## *International power helps flood control along the Des Moines and Central Iowa Ry.*

Raising the right-of-way above the flood stage of the Des Moines River is one of the methods of flood control being used by the Des Moines and Central Iowa Ry.

Their International TD-6, pictured here, is raising the tracks  $7\frac{1}{2}$  feet above any recorded flood level to assure steady freight service to numerous industries located along the line.

Raising roadbeds means moving mounds

of dirt and clay along the right-of-way. And the TD-6 moves it the right way—faster, easier and at lower cost.

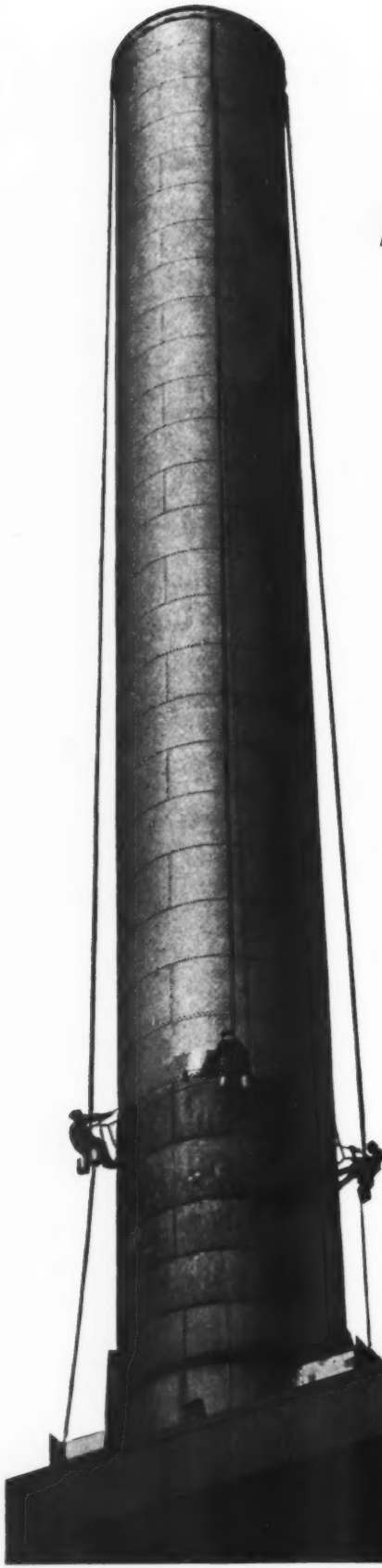
Whether controlling rising rivers or rising maintenance costs is your problem, you'll find International "Power that Pays" does the job well! See your International Industrial Distributor today.

**INTERNATIONAL HARVESTER COMPANY  
CHICAGO 1, ILLINOIS**

**POWER THAT PAYS**



**INTERNATIONAL**



## ***If you think your paint jobs are tough***

If you place the orders or approve the bills for jobs like this, you know how painting costs break down. And you know that the cost of even the best paint is only a small part of the total—nowhere near what it saves by adding extra years between repainting. That's why so much quality aluminum paint is used for jobs like this.

Because aluminum paint is the first choice for many industrial applications, special formulas have been developed. Paints made to these formulas last longer, cover better, stand up under corrosive industrial smoke and fumes.

If you have plants, structures or equipment that need paint, it will pay you to find out more about the kinds of aluminum paints now available. We do not make paint. But, as the leading suppliers of aluminum pigments to paint manufacturers, we want you to get the best results from the aluminum paint you buy.

Write us about your paint problems and we'll recommend the kind of paint to use. We'll also send you a copy of *Painting with Aluminum*. It is packed with facts and answers to all types of industrial painting questions. Write Paint Service Bureau, Aluminum Company of America, 1789-F Alcoa Building, Pittsburgh 19, Pennsylvania.

**Alcoa**   
**Aluminum**

**ALUMINUM COMPANY OF AMERICA**

"SEE IT NOW" with Edward R. Murrow—CBS-TV every Sunday  
... brings the world to your armchair. Consult your newspaper  
for local time and channel.

# "IT GETS THE BIG PAYLOAD"

**T**HE high-heaped load in this Caterpillar No. 80 Scraper means dollars cut off right-of-way construction costs. The No. 80 and matching Cat\* D8 Tractor are working 18 hours a day over muddy, wooded terrain, grading a four-mile spur of the Illinois Central RR. It will serve the Louisville Gas and Electric Co., seven miles southwest of Louisville, Ky.

"When the ground is soft and wet, our D8 with the No. 80 Scraper gets the big payload and moves it without fuss. It's a good dirt-moving team under all conditions, and maintenance cost is low," says A. R. Whittington, a partner in Corum and Co., contractors on this job.

The hefty No. 80 Scraper hauls a heaped load of 20 yards. With its low center of gravity, the No. 80 has earth-hugging ability in rough and sticky going. Being cable operated, it loads smoothly and can pump "dead" material. Positive, fast-responding ejection gets rid of the load quickly and evenly. And the push block extends well behind the tires for powerful, in-line pusher action.

It's built to stay on the job and out of the repair shop. Beefed-up construction and durable, high-tensile steels mean that it will earn its keep for years to come.

Your Caterpillar Dealer—who provides skilled service on the equipment he sells—will gladly give you an on-the-job demonstration of the Cat Scraper that fits your needs. Give him a call today.

Caterpillar Tractor Co., Peoria, Illinois.

## CATERPILLAR\*

\*Both Cat and Caterpillar are registered trademarks—©

**NAME THE DATE...  
YOUR DEALER  
WILL DEMONSTRATE**

Visit the Caterpillar  
Exhibit at the Atlantic City convention.



# LORAIN **TL** SERIES

HANDLES *Many* JOBS...



## ON C.B. & Q.R.R. SYSTEM

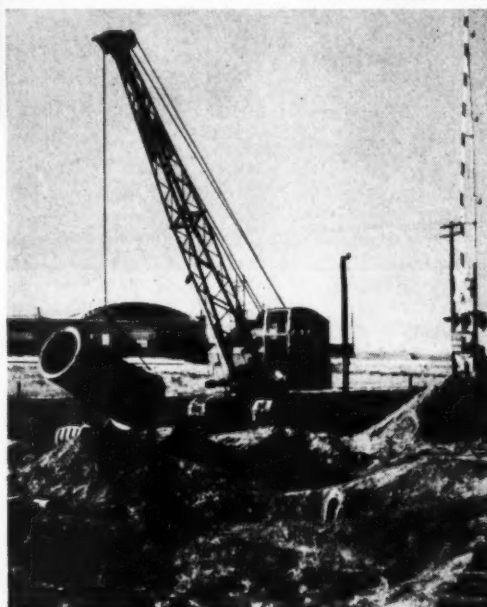
"The Lorain is used all over the C. B. & Q. System," says the Bridge and Building Department of the C. B. & Q. R. R. . . . and here are two good examples of why they find it so useful.

In the top photo, the Lorain "TL", equipped as a dragline, is excavating for a new culvert under a spur track into a new Denver warehouse. This same Lorain then serves as a crane to lift and place the 9800lb. sections of 60 in. concrete culvert pipe into the trench as shown below.

These are typical of jobs Lorain can do for you, too. You'll find Lorains the cost-cutting answer for handling rails, laying track, building bridges, maintaining right-of-way, working on-car, off-car, on-and-off the right-of-way. You, too, can keep a Lorain busy all over your system . . . saving time and men!

There are many reasons including modern design, quality manufacture and choice of mountings that explain why the Lorain "TL" is so popular with railroads across the country. Get the full story from the nearest Lorain Distributor located in any one of 143 cities.

**THE THEW SHOVEL CO., LORAIN, OHIO**



**RAILROAD MEN PREFER THE NAME**

# THEW LORAIN®

# It's New!



## OXWELD'S "DRIBURN" ROD *for driver burns*

DRIBURN welding rod to eliminate trouble-breeding driver burns is a companion rod to OXWELD's popular MW rod, for many years the standard rod for building up rail ends, frogs, and switch points.

DRIBURN welding rod has what your track-welders need:—

- \*Designed specifically for build-up of driver burns.*
- \*Metal deposit has same hardness as rail steel.*
- \*Has the same excellent flow characteristics as OXWELD's MW rod.*

DRIBURN welding rod is green tipped for easy identification. It comes in  $\frac{3}{16}$ - and  $\frac{1}{4}$ -inch diameters, 36 inches long.

A trial will convince you. See your OXWELD representative or write to OXWELD for a supply of the new DRIBURN welding rod.

*"Oxweld," "Driburn," and "MW" are trade-marks of Union Carbide and Carbon Corporation.*

### OXWELD RAILROAD SERVICE COMPANY

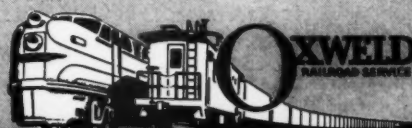
A Division of Union Carbide and Carbon Corporation



Carbide and Carbon Building Chicago and New York

In Canada:

Canadian Railroad Service Company, Limited, Toronto



SINCE 1912 — THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

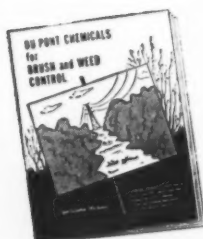


For faster, safer clearance that lasts for years

# Kill Brush with Du Pont Ammate®

Many users report one spray with Du Pont "Ammate" kills brush so thoroughly that repeat sprays are not needed for years.

In most cases, when the original spray job is done well, brush is kept under control with nothing more than occasional spot sprays starting five or more years later. This assures lower cost brush control with less work for your maintenance crews or custom sprayers.



**Free illustrated booklet** describes how to control brush in rights of way with Du Pont "Ammate." For your copy, write Du Pont, Grasselli Chemicals Dept., Wilmington, Del.

On all chemicals always follow directions for application. Where warning or caution statements on use of the product are given, read them carefully.

Here's why "Ammate" works so well.

- Kills roots of brush as well as tops, yet allows low-growing natural cover to come back.
- Control lasts for years, saves labor of hand cutting or annual spraying.
- Reducing to a minimum the hazard of damage by spray drift.
- Not hazardous to operators, livestock or wildlife. Nonflammable.
- Available as concentrated solution in tank cars for railroad use.

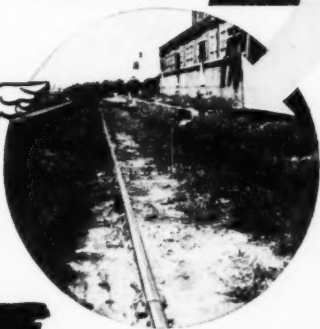


BETTER THINGS FOR BETTER LIVING  
...THROUGH CHEMISTRY

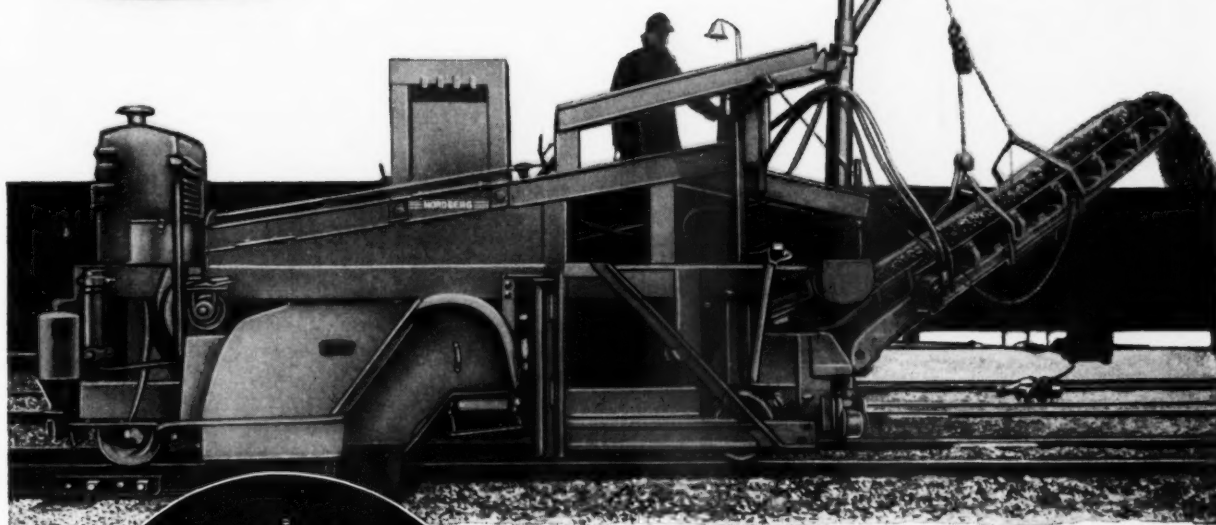




If your yards  
look like THIS...



Instead of like THIS...



...then  
**YOU** need the  
**NORDBERG  
DSL  
YARD CLEANER**

For details, send for BULLETIN 189.

**W**HY put up with dirty, hazardous yard trackage . . . when you can have *really* clean, safe and efficient yards, *mechanically* with the Nordberg DSL Yard Cleaner!

This versatile Yard Cleaner cleans track faster, better, and at a much lower cost. It cleans right down to the ties—and without damaging them.

A self-propelled machine, the Nordberg DSL Yard Cleaner moves on the rails with two plows grading the intertrack and feeding the material into an impeller. The impeller, which is composed of rotating banks of short steel cable, lifts this material as well as that on the ties and deposits it on two cross conveyors. The material is then fed onto a 25-ft. wasting conveyor for disposal into cars on an adjacent track, into dump body push trucks, or over the bank.

Having completed the cleaning job, the DSL Yard Cleaner is easily removed from the track with a hydraulically-actuated run-off device.

\*Copyright, Nordberg Mfg. Co.

RB51-R2

**USE NORDBERG  
"Mechanical Muscles"\***  
TO DO A BETTER,  
FASTER MAINTENANCE  
JOB AT LOWER COST . . .

ADZING MACHINE • CRIBEX® • BALLASTEX® • SCREENEX® • SPIKE PULLER • TIE DRILL •  
GANDY—TIE PULLER AND INSERTER • POWER JACK • POWER WRENCH • RAIL DRILL •  
RAIL GRINDERS • TRACK SHIFTER • DSL YARD CLEANER • SPIKE HAMMER  
DUN-RITE GAGING MACHINE

**NORDBERG MFG. CO., Milwaukee, Wis.**





# ESTERON BRUSH KILLER SIMPLIFIES MAINTENANCE

Its powerful esters control brush and weeds  
along miles of right-of-ways



*Photo courtesy of Spray Services, Inc.*

Brush and weed control along thousands of miles of right-of-ways is a big job—one that calls for the most effective chemicals available. Esteron® Brush Killer is first choice with spray service companies and railway maintenance men. Here's why this *proved* formulation should be your first consideration in a successful brush and weed control program:

Esteron Brush Killer has given outstanding results in all sections of the country. It contains 6.31 lb. per gallon (2 lb. of 2,4-D and 2 lb. of 2,4,5-T acid equivalent) of the more powerful, low-volatility pro-

pylene glycol butyl ether esters of 2,4-D and 2,4,5-T. Esteron 245, containing 2,4,5-T esters, is especially effective against poison ivy and other 2,4-D resistant species. This product is recommended for year-around stump treatment and basal bark application. (Grass in ballast? Use Dow Sodium TCA 90%.)

Ask your supplier or write for literature on right-of-way vegetation control. THE DOW CHEMICAL COMPANY, *Agricultural Chemical Department*, Midland, Michigan. In Canada: Dow Chemical of Canada, Limited, Toronto, Canada.

*you can depend on* **DOW AGRICULTURAL CHEMICALS**

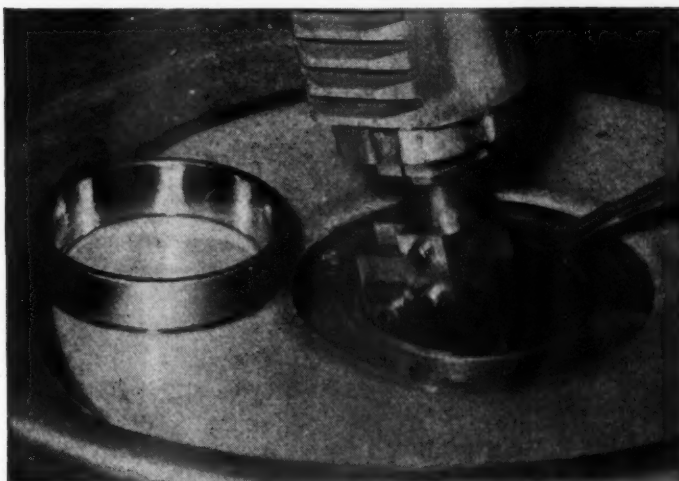


# FROM START...



**WE MAKE OUR OWN STEEL** to insure top quality from start to finish. The special grade alloy steels which give Timken bearings their strength and resistance to wear are made in our own steel mills.

# TO FINISH...



**FINISHED TO CLOSER TOLERANCES.** Finishing of rollers and races to incredible smoothness accounts for the precision performance of Timken tapered roller bearings.

## TIMKEN® bearings give you more for your money than any other bearing

**T**IMKEN® bearings are the only bearings that give you all these advantages: advanced design, precision manufacture, rigid quality control, special analysis Timken steels. That's why you should be sure that the tapered roller bearings you use are Timken bearings. Always look for the trade-mark "Timken" stamped on every bearing. The Timken

Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ont. Cable address: "TIMROSCO".

**TIMKEN**  
TRADE MARK REG. U. S. PAT. OFF.  
**TAPERED ROLLER BEARINGS**



NOT JUST A BALL  NOT JUST A ROLLER  THE TIMKEN TAPERED ROLLER  BEARING TAKES RADIAL  AND THRUST  LOADS OR ANY COMBINATION 

RAILWAY TRACK and STRUCTURES

For additional information, use postcard, pages 579-580

JUNE, 1953

533



# A one-man "work crew"...



Building an 800,000 cubic yard railroad fill across this valley in India, material was taken from borrow pits located on the hills. With hauls averaging 750 ft. one-way, and in temperatures of 110° to 140° F. Tournapulls delivered 65 cubic yds. an hour... 390 cubic yds. per 6-hour shift, twice as much as crawler-tractors.

Two 40 h.p. tractors, used for push-loading, serviced all 5 D Tournapulls. Loading time in hard, dry, root-filled, clay loam was less than 1/2 minute with 5-yard pay loads. On railroad work in this country, Tournapulls usually self-load 5 cubic yards, and when push-loaded in most materials carry 7 yards.



## ATTACHMENTS and INTERCHANGEABLE EQUIPMENT



BULLDOZER BLADE



V-TYPE SNOW PLOW



9-ton REAR-DUMP

# where and when you need it...

## 28 m.p.h. D Tournapull speeds right-of-way maintenance

High-speed, rubber-tired D Tournapull is an ideal off-track maintenance tool. At a moment's notice "D" and its one operator can be dispatched to handle widely-scattered maintenance jobs. Rig travels anywhere at speeds to 28 m.p.h. . . . along right-of-way, over paved highway, or cross-country . . . needs no trailer transportation, no loading, unloading, or blocking. Big low-pressure tires take unit across tracks, ties, and switches without damage . . . eliminates planking.

Tournapull self-loads 5 yards, in most materials, loads 7 yards with pusher or, where two or more work together, can push or snatch load each other. It prepares new roadbeds . . . ballasts . . . repairs washouts . . . trims sideslopes . . . maintains bridge approaches . . . cuts drainage ditches . . . stockpiles or reclaims coal, etc.

No interruption to train schedules . . . no running to siding. Tournapull merely drives out along side the track . . . returns to work the instant train is past. As an example of what D Tournapulls can do for railroads, read this production story from India:

### Central Railways eliminate dangerous grades

To eliminate steep, dangerous grades on a 4-mile section of their line between Budni and Barkhera, India, Central Railways had to move 940,000 yards of hard, dry, rooted clay loam. About 85% of this yardage went into a fill across a single valley crossed by the right-of-way. Working in temperatures of 110° to 140° F., here's how 5 of these handy D Tournapulls economically handled this big production job:

### Outproduce crawler-scrapers, 2 to 1

Loading on either side of the fill, each Tournapull heaped 5 pay yds. per load. Production records show that typical 1500' cycles were completed in 4.6 minutes. Hourly output averaged 13 trips (65 pay yds.) per unit . . . production per 6-hour shift averaged 78 trips (390 pay yds.) per unit. Crawler-scrapers, working same cycle with the same supervision and same type of Indian operators, were outhauled by a 2-to-1 margin . . . moving only 37 loads per shift.

Write for the bulletin on this versatile 7-yard "D" maintenance tool. We'll be glad to arrange for a demonstration on your line . . . there's no obligation. Tell us where and we'll arrange to drive in soon.

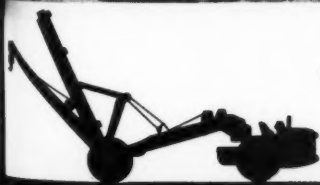
Tournapull—Trademark Reg. U. S. Pat. Off. DP-122

**NOW IT IS...**

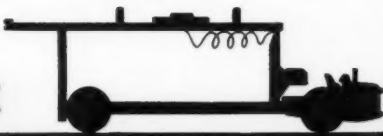
## LeTourneau-Westinghouse Company

PEORIA, ILLINOIS

The recent purchase by Westinghouse Air Brake Corporation of the earthmoving and related business of R. G. LeTourneau, Inc., combines two firms which are leaders in their respective fields. It brings together the engineering genius of LeTourneau and the practical railroad experience of Westinghouse. With greater resources than before, LeTourneau-Westinghouse can now serve you even more effectively with high speed, dependable, and economical off-track



10-ton CRANE



10-ton FLATBED



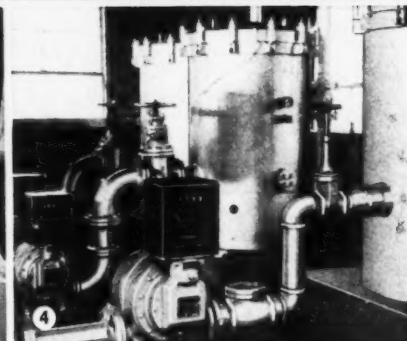
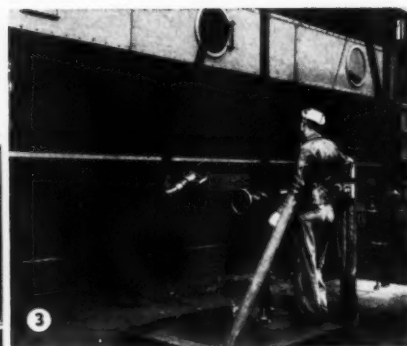
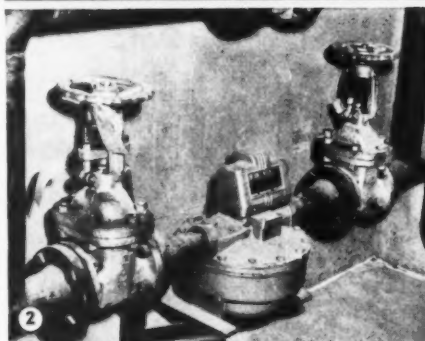
## ...HEADQUARTERS FOR OIL-HANDLING SYSTEMS

### ... FOR AMERICA'S RAILROADS

Regardless of what your fueling or lube oil handling problem might be, Bowser can help you solve it. Bowser systems are available in a variety of types and capacities: large systems for terminal multifueling, smaller ones for single locomotives, switchers, section work cars or scooters . . . all these are in service every day on most of America's Railroads.

As the pioneer and foremost builder of railroad liquid-handling equipment, Bowser can furnish complete engineering service and can supply all the necessary equipment for proper installation of complete systems. Bowser will also accept full responsibility in assuring you of complete operating satisfaction.

**WRITE  
TODAY**



1 One-package SERV-A-TRAIN diesel or lube oil unit.

2 Bowser meter checking lube oil receipts.

3 High-speed fueling . . . up to 350 g.p.m. from each hose.

4 Typical Bowser installation measuring, filtering and dispensing diesel fuel oil.

#### REGIONAL OFFICES

ATLANTA • CLEVELAND • DALLAS • FORT WAYNE • KANSAS CITY  
NEW YORK • SAN FRANCISCO • WASHINGTON, D. C. • HAMILTON, ONT.



BOWSER, INC., 1323 CREIGHTON AVE., FORT WAYNE 2, IND.



# You too, can reduce track maintenance costs with **RACINE** **PORTABLE** **TRACK** **TOOLS**

*Features that make it easy for you  
to choose a RACINE portable Rail Saw*

▶ **LABOR SAVING** — One man operation, does the work of several hands. Easily moved by two men — no traffic interference.

▶ **EFFICIENT** — In or out of track, a Racine Saw cuts fast, smooth and accurate. Cut-off any length down to one-tenth of an inch.

▶ **MATERIAL SAVINGS** — Shattered and burned rail ends, failures from fractures caused by "nick and break" or torch methods of cropping are substantially reduced.



WRITE FOR NEW CATALOG showing  
Racine's complete line of Rail Tools. Ad-  
dress **RACINE HYDRAULICS & MACHIN-  
ERY, INC., 2038 Albert St., Racine, Wis.**

## RACINE

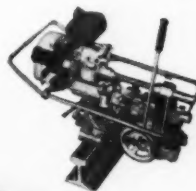
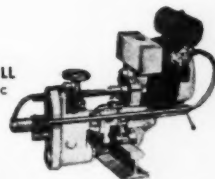
HYDRAULICS & MACHINERY, INC.

RACINE, WISCONSIN



**RACINE UNIT TIE TAMPER**  
Lightweight — Shock-Free  
Operation

**RACINE PORTABLE RAIL DRILL**  
Lightweight — Automatic  
Power Feed



**RACINE PORTABLE BOND DRILL**  
Twin Spindles —  
Lever and Rack Feed

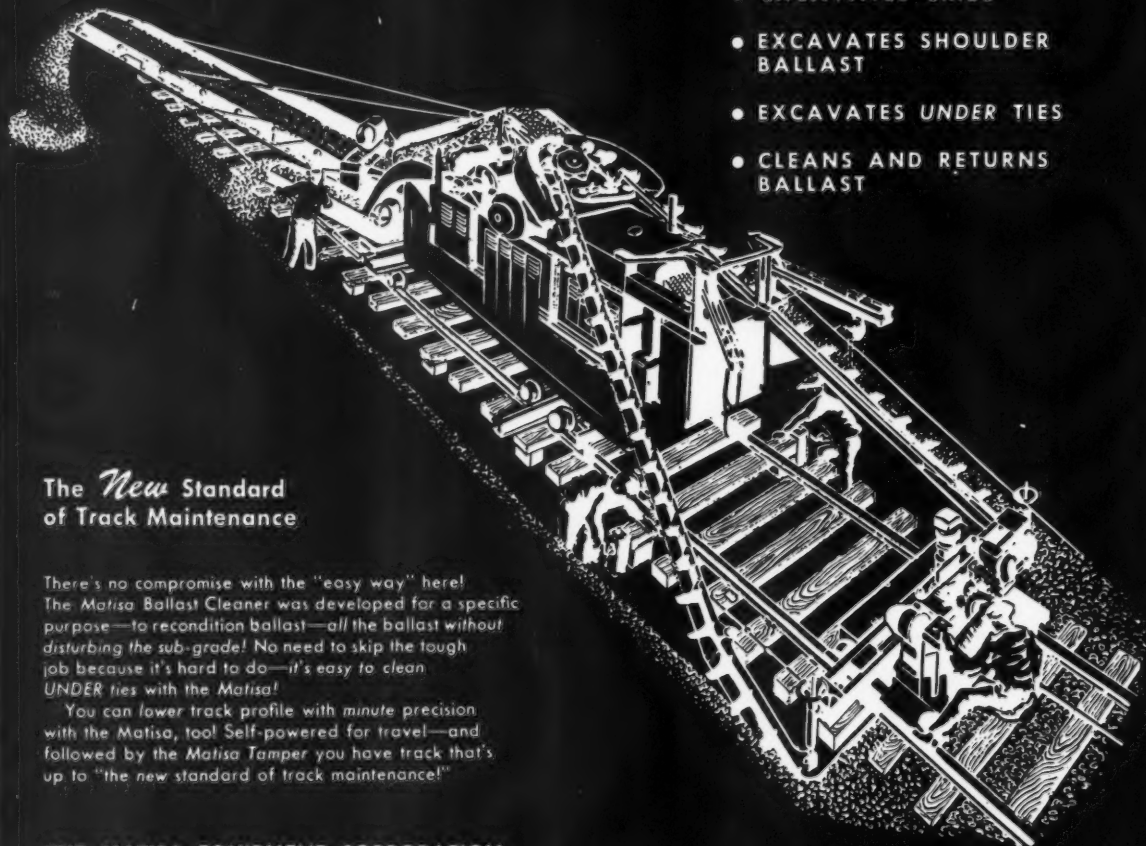
# ONE

# Matisa

## DOES ALL FOUR

*in ONE operation!*

- EXCAVATES CRIBS
- EXCAVATES SHOULDER BALLAST
- EXCAVATES UNDER TIES
- CLEANS AND RETURNS BALLAST



### The *New* Standard of Track Maintenance

There's no compromise with the "easy way" here! The Matisa Ballast Cleaner was developed for a specific purpose—to recondition ballast—all the ballast without disturbing the sub-grade! No need to skip the tough job because it's hard to do—it's easy to clean UNDER ties with the Matisa!

You can lower track profile with minute precision with the Matisa, too! Self-powered for travel—and followed by the Matisa Tamper you have track that's up to "the new standard of track maintenance!"

**THE MATISA EQUIPMENT CORPORATION**  
224 South Michigan Blvd. • Chicago 4, Illinois

**TRACKWORK SPECIALISTS ALL OVER THE WORLD**



Visit our Exhibit Booth LA-1 Atlantic City

# NEWS NOTES...

JUNE 1953

**...a resumé of  
current events  
throughout the  
railroad world**

Class I railroads in the first three months of this year had an estimated net income, after interest and rentals, of \$186,000,000 million, a gain of \$41,000,000 compared with the same period of 1952, according to the Bureau of Railway Economics of the Association of American Railroads. The total operating revenue were \$2,595,586,715, compared with \$2,587,830,490.

Downing B. Jenks, vice-president (operating), Chicago, Rock Island & Pacific, has been elected to the newly created post of executive-operating vice-president. John W. Berriger, formerly president of the Chicago, Indianapolis & Louisville, and more recently vice-president of the New York, New Haven & Hartford, has been elected vice-president of the Rock Island to serve as an assistant to the president, performing special assignments.

Plans for a \$20 million display at Atlantic City, N. J., of the latest in railroad equipment have been completed, according to an announcement by C. W. Floyd Coffin, president of the Railway Supply Manufacturers' Association. The exhibition will be held June 22-27, coincident with meetings of the Mechanical, Electrical and Purchases & Stores Divisions of the AAR. There will also be meetings of the member roads of the AAR, the American Short Line Railroad Association and of the Pan-American Railway Congress. The exhibits will feature hundreds of products from the latest in locomotive, passenger and freight cars, to tie-tamping equipment.

As part of a campaign to oppose railroad efforts to show the public the proper economic place of highway freight service, Pennsylvania truckers have called on truck firms in 22 eastern states to join them in a new organization, the Eastern Highway Transport Conference.

There would be "no value" in providing additional funds for the Interstate Commerce Commission "until a complete reorganization of the commission has been affected, and until efficiency has been substituted for inefficiency," according to advice received by the House of Representatives from its committee on appropriations. Nevertheless, the House committee recommended appropriations for the commission for the fiscal year 1954, which would total \$146,676 more than it had received for the current fiscal year.

"The private motorist has for too long paid more than his just share of the tax load," the American Automobile Association said recently. It also said "highway users should pay in proportion to benefits they receive, giving due consideration to added costs of roads required for heavy vehicles."

Construction of a new \$4.1-million rail-truck freight terminal at Chicago has been undertaken by the Chicago, Burlington & Quincy. The structure will have a length of 1,400 ft.

## NEWS NOTES (continued)

---

The railroad share of organized military movements has shrunk to 58 per cent of the total, and promises to shrink further unless the railroads are able effectively to stop present trends, according to information brought out at a recent meeting of the American Association of Passenger Traffic Officers. The use of railroads by military personnel is being discouraged by existing travel rules and practices of the military services, it was brought out. Charter rates offered by air lines—particularly non-scheduled operators—were largely blamed for the loss of this business by the railroads.

•

The efforts of the present administration in Washington "will be increasingly directed to encouragement and development of an efficient and adequate private-owned and operated transportation system," according to a recent statement of Robert B. Murray, Jr., undersecretary of commerce for transportation. "We favor federal participation only where it is clearly demonstrated that such activity is essentially and fully justified," he stated.

•

A streamlined stainless steel dining car, called the "Thrift Grill," available to coach and parlor-car passengers, has been added to the New York Central's "Empire State Express," all-reserved seat coach and parlor car-trains operating daily between New York and Cleveland. The purpose of the new car, which is in addition to a regular dining car, is to offer a low-cost dining service. Breakfast begins at 70 cents, luncheon at \$1.40 and dinners at \$1.50.

•

A program for the shipment of bulk flour in covered hopper cars, which is expected to use 200 or more cars in regular, "controlled" service, is well underway, according to Earl B. Smith, vice president—traffic of General Mills, Inc. Decision to undertake the program was made following successful experiments with two hopper cars modified for the purpose. The modifications are relatively simple.

•

During the calendar year 1952, American and Canadian railroads suffered a total of 6,374 fires which resulted in aggregated losses of \$12,524,971, according to the compilation of a Committee on Records and Statistics of the Fire Protection and Insurance Section of the AAR. The number of fires aggregated 1,250 (24 per cent), more than in 1951, but the dollar loss was \$392,028 (3 per cent) less.

•

ALSO WORTH NOTING—Kenneth L. Vore, director of the Military Traffic Service, has been named director of transportation for the Department of Defense . . . President Eisenhower said recently that his administration favors U. S. participation in construction of the St. Lawrence seaway project. He is planning, he said, to send recommendations to Congress on the seaway project . . . The National Shipping Authority has allocated 50 ships to the Commodity Credit Corporation for temporary storage of approximately 12 million bushels of grain. The grain will be moved from storage facilities in Michigan, Indiana, Ohio and New York, to make room for the 1953 crop.

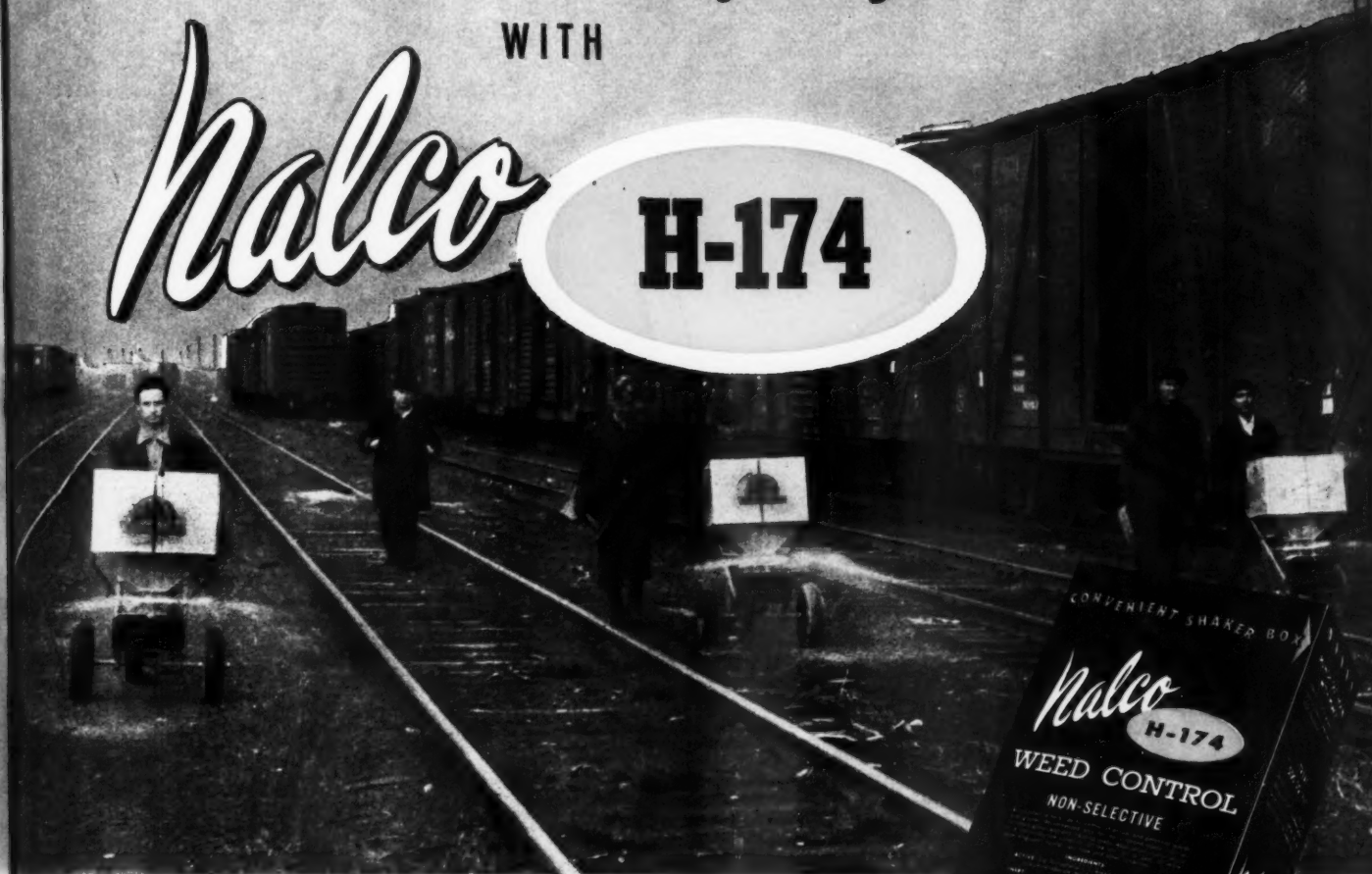


*Once Over Lightly*

WITH

*Nalco*

**H-174**



## for a Full Season's WEED CONTROL



ONCE over lightly in your yards with Nalco H-174 gives you a full season of effective weed and brush control. High activity and sustained, non-selective killing power eliminate emergent growth, prevent regrowth by staying in the soil for months after application.

No mixing or dilution of Nalco H-174 is necessary. New granular, free-flowing form can be used as it

comes from the convenient shaker box, or in Nalco hand or wheeled spreaders.

For yard application where cars cannot be conveniently moved, the Nalco wheeled spreader is ideal. Spreads Nalco H-174 at adjustable dosage rates, and up to sixteen feet total width. Low distributor head spreads H-174 evenly, economically over area being treated.

Full information on Nalco H-174 and Nalco Spreaders will be furnished promptly upon request.

*Nalco*®

**NATIONAL ALUMINATE CORPORATION**

6196 West 66th Place

Chicago 38, Illinois

In Canada: Alchem Limited, Burlington, Ontario

**PRODUCT . . . Serving Railroads through Practical Applied Science**



**"He  
Might  
Need  
It..."**

"He never was much for letter-writing when he was in college. But he must know how anxious Mother and I are . . . now that he's off in Korea. Haven't heard from him in six weeks. Of course, they say 'no news is good news' . . . but I wonder. Maybe he can't write . . . because . . . maybe he's in a hospital somewhere. And maybe he needs blood. I don't know . . . but

I'm not taking any chances. That's why I'm giving blood."

Yes, all kinds of people give blood—for all kinds of reasons. But whatever your reason, this you can be sure of: Whether your blood goes to a combat area, a local hospital, or for Civil Defense needs—this priceless, painless gift will some day save an American life!

**Give Blood Now**  
**CALL YOUR RED CROSS TODAY!**  
**NATIONAL BLOOD PROGRAM**



### Business Executives!

#### ✓ Check These Questions!

If you can answer "yes" to most of them, you—and your company—are doing a needed job for the National Blood Program.

- ☐ Have you given your employees time off to make blood donations?
- ☐ Has your company given any recognition to donors?
- ☐ Do you have a Blood Donor Honor Roll in your company?
- ☐ Have you arranged to have a Blood-mobile make regular visits?
- ☐ Has your management endorsed the local Blood Donor Program?
- ☐ Have you informed employees of your company's plan of cooperation?
- ☐ Was information given through Plant Bulletin or House Magazine?
- ☐ Have you conducted a Donor Pledge Campaign in your company?
- ☐ Have you set up a list of volunteers so that efficient plans can be made for scheduling donors?

Remember, as long as a *single* pint of blood may mean the difference between life and death for *any* American . . . the need for blood is *urgent*!

# Layne ensures your water supply

## UNDIVIDED LAYNE RESPONSIBILITY MEANS COMPLETE SERVICE, LOWER COSTS



### Layne surveys and test wells

Layne's *complete* service begins long before the wells are drilled . . . with geological surveys made in cooperation with engineers of the client company or municipality. Test-hole drilling shows actual conditions.

### Layne analyses and recommendations

Samples taken from the test holes go to Layne's central laboratories, where technicians report on the earth structure and qualities of the water. From these reports, water-system recommendations are made.

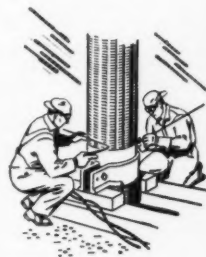


### Layne-engineered pumps, screens, casings

Into every Layne well goes equipment designed for the specific job—the finest equipment, produced with the greatest economy, because of Layne's thorough engineering skill and world-wide experience.

### Layne installation and maintenance service

Skilled Layne workmen handle every stage of the job—assuring a system custom-engineered for your own situation. And Layne's experience is always at your service for any maintenance work you may need.



## Let Layne help you plan ahead on your water needs

Layne welcomes the opportunity to share in long-range planning for your water-supply needs. For information on any phase of well water supply or pump equipment, contact your nearest Layne Associate Company or write Layne & Bowler, Inc., General Offices, Memphis 8, Tenn.



**WATER WELLS • VERTICAL TURBINE PUMPS  
WATER TREATMENT**

*Layne Associate Companies Throughout the World*

No. 294 of a series

## RAILWAY TRACK and STRUCTURES

SIMMONS-BOARDMAN PUBLISHING CORPORATION

79 WEST MONROE STREET  
CHICAGO 3, ILL.

Subject -- Gaging Your Interests

June 1, 1953

Dear Readers:

People or organizations whose business requires them to gage the interests or reactions of the public, or a segment of the public, regarding political issues, entertainment programs, international affairs, or what have you, have various ways of obtaining this information. The more commonly known devices used for this purpose range all the way from the Hooper ratings and the Gallup poll to postcard surveys. Some people, on the other hand, have their own private little systems for "feeling out" the public, or a segment of it.

In our work, for example, we have several ways of helping us to decide what subjects are of particular interest to our readers at any given time. Comments from subscribers, written or oral, are certainly a sound index of their interests. So are the discussions that take place wherever railroad men congregate -- at luncheons, in committee meetings, or at conventions. When you are taking part in such discussions you will notice that they almost invariably settle down into a lengthy exchange of views on a particular subject or problem. When members of our staff are present, these discussions give us valuable clues in our ever-lasting search for "copy themes."

There is still another way we have of gaging your interests, which I think is a little unusual. This is the reaction we receive to the questions published each month on the first page of our "What's the Answer?" department. Frequently we receive one or more unsolicited answers to each of these questions. On occasion, however, some particular question will draw a comparative avalanche of answers. When this happens it is an obvious indication that we have found a subject in which there is an unusually high degree of interest among our readers. It then becomes our job to determine the extent to which the subject lends itself to further treatment in the magazine.

Recently, for example, we published a question inquiring if track foremen in busy yards should have special qualifications. The answers to this question were scheduled for publication in the May issue. However, so many answers were received that, because of space limitations, three of them had to be held out of that issue for publication later. The first of these appears in this issue. From this experience it seems obvious that our readers, at the present time at least, are deeply concerned over the problem of obtaining competent track foremen. Perhaps we will be able to develop even further information for you on this subject.

From your own experience with this subject you will be able to judge whether our "What's the Answer?" department is an accurate barometer of your interests.

Yours sincerely,

*Merwin H. Dick*

Editor

MHD:lw

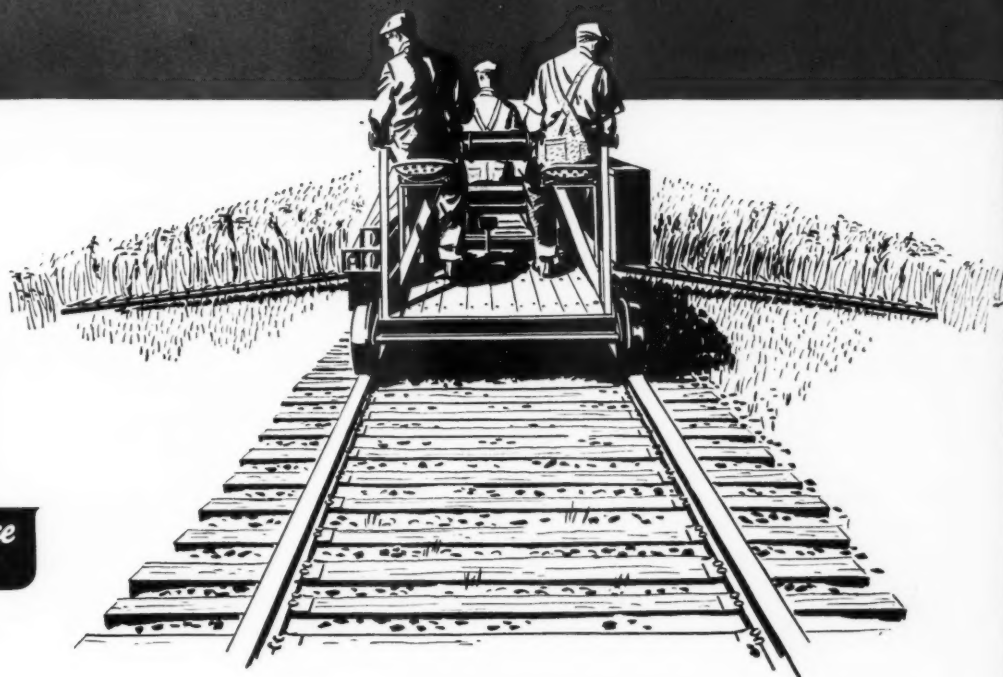
Members: Audit Bureau of Circulations and Associated Business Publications



# Fairmont

RAILWAY MOTOR CARS AND WORK EQUIPMENT

## Better railroading through better maintenance!



*Performance*  
ON THE JOB  
COUNTS

Within the past half-century, virtually every problem in railway maintenance has come under the scrutiny of Fairmont's skilled engineers and craftsmen. And during these years, the answers have come from Fairmont with revealing regularity. Consider, for a moment, the problem of weed control. Fairmont manufactures many pieces of equipment for this purpose—and each is the finest of its type available to the industry. The Fairmont M5 Series A Weed Mower, for example, illustrated above in operation, is ideal for fast, sure, economical mowing. It will

cut a 6-foot swath on each side and is available with cutting extensions up to 66". Its other noteworthy features include an automatic Cutter Bar Release, heavy-duty sickles, clutch-equipped engines, and many other items of construction and engineering that guarantee long and trouble-free operation. Its versatility, ruggedness, and ease of operation make it perfect for a wide variety of mowing jobs. The M5 Series A Weed Mower is another significant result of Fairmont's long crusade to provide better railroading through better maintenance.

**FAIRMONT RAILWAY MOTORS, INC., FAIRMONT, MINNESOTA**

MANUFACTURERS OF INSPECTION CARS, SECTION AND GANG CARS, HY-RAIL CARS, MOTOR CAR ENGINES, PUSH CARS AND TRAILERS, WHEELS, AXLES AND BEARINGS, MOWERS, BALLAST MAINTENANCE CARS, WEED BURNERS AND EXTINGUISHER CARS, DERRICK CARS, OIL SPRAY CARS, GROUTING OUTFITS, WEED SPRAY CARS, TIE SPRAYERS, TIE REMOVERS, TIE INSERTERS

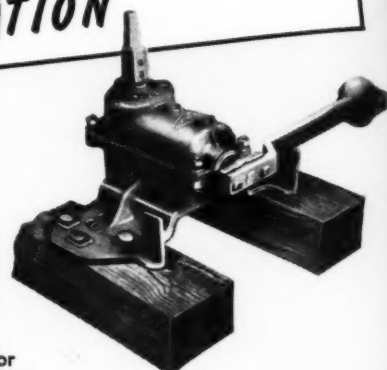
# AMERICA'S

most complete  
line of

# SWITCH STANDS

**RACOR**

**FOR MAIN LINE or YARD USE  
HIGH or LOW TYPES  
FOR RIGID or AUTOMATIC  
OPERATION**

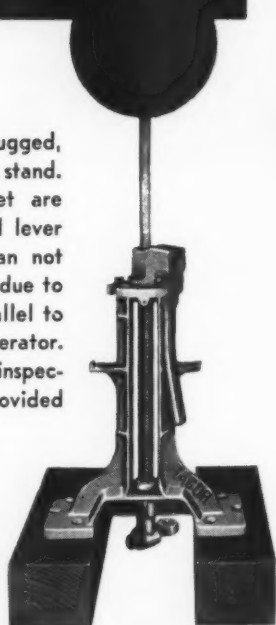


## STYLE 22 (PATENTED)

STYLE 22 is an extra heavy duty automatic stand recommended for turnouts where switches are apt to be run through. Stand can be hand thrown as well as thrown automatically. When stand is trailed, the switch points are partly opened by the wheel flanges and throw to the opposite position is automatically completed by the stand. During automatic operation the target lamp rotates to indicate position of the switch points while hand lever remains stationary. Separate padlock pedestals will be furnished when specified for application over the integral lever rests if padlocking of hand lever is necessary.

## STYLE 112-D

STYLE 112-D is an extremely rugged, column type of MAIN LINE switch stand. Body casting and handle bracket are malleable iron. Spindle and hand lever are forged steel. Hand lever can not become disengaged from bracket due to its novel design. It is thrown parallel to track, thus safeguarding the operator. All parts are easily accessible to inspection and double protection is provided against dropping of spindle.



1 3/4" diameter, forged heat treated adjustable cranks provide strength exceeding that of the strongest rigid type cranks. They permit proper setting of switch points without respiking.

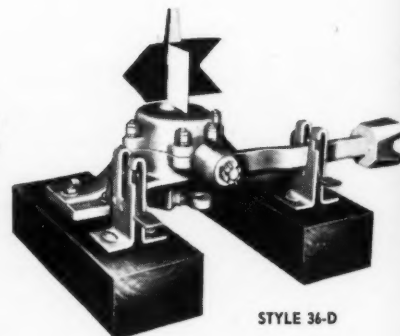
ALL RACOR switch stand designs have been developed from a wealth of knowledge acquired from many years of experience and research in the exclusive manufacture of special track equipment.

## STYLES 36-D and 36-H (PATENTED)

STYLES 36-D and 36-H are parallel throw gearless stands. Operating parts and base castings are interchangeable and provide a basic assembly for high and low stands. For MAIN LINE or YARD use. No pins to shear. Long life and minimum of lost motion assured by the extra large bearing surfaces of the few heat treated forged wearing parts.



STYLE 36-H



STYLE 36-D

AMERICAN

**Brake Shoe**

COMPANY

**RAMAPO AJAX DIVISION**

109 North Wabash Avenue, Chicago 2, Ill.

Illustrated above are but a few of our popular switch stand styles. Write for descriptive literature featuring our complete switch stand line.

RAILWAY

**TRACK and  
STRUCTURES**

TRADEMARK

Published on the first day of  
each month by the

**SIMMONS-BOARDMAN  
PUBLISHING  
CORPORATION**

79 West Monroe St., Chicago 3

New York 7,  
30 Church Street

Washington, D. C., 4  
1081 National Press Bldg.

Cleveland 13,  
Terminal Tower

Portland 5,  
514 Terminal Sales Bldg.

San Francisco 11,  
244 California Street

Los Angeles 17,  
1127 Wilshire Blvd.

Dallas 4,  
2909 Maple Ave.

James G. Lyne, *President*, Samuel  
O. Dunn, *Chairman Emeritus*, J.  
S. Crane, *Vice-President and Sec-  
retary*, C. Miles Burpee, Harry H.  
Melville, C. W. Merriken, John R.  
Thompson, William H. Schmidt,  
Jr., Fred W. Smith, John S. Vree-  
land, *Vice Presidents*, Robert G.  
Lewis, *Assistant to President*,  
Arthur J. McGinnis, *Executive  
Vice-President and Treasurer*,  
Ralph E. Westerman, *Assistant  
Treasurer*.

Subscription price to railroad  
employees only in the U.S., U.S.  
possessions and Canada, \$1.50  
one year, \$2 two years, payable  
in advance and postage free.  
Subscription price to railroad em-  
ployees elsewhere in the Western  
Hemisphere, \$5 one year, \$10  
two years. All other countries,  
\$7 one year, \$14 two years.  
Single copies 50¢. Address cor-  
respondence concerning subscrip-  
tions to Robert G. Lewis, Assis-  
tant to President, 30 Church Street,  
New York 7.

Member of the Associated Busi-  
ness Papers (A.B.P.) and of  
the Audit Bureau of Circulations  
(A.B.C.), and is indexed by  
Engineering Index, Inc.

PRINTED IN U.S.A.

VOL. 49, NO. 6

JUNE, 1953

**Editorials** ..... 549  
Success—Drainage Districts—Ingenuity

**Big Union Pacific Line Change** ..... 551  
How modern machines and methods speed completion of the famed Sher-  
man Hill project in Wyoming

**Yard Track Foremen** ..... 556  
Are special qualifications needed? George O'Rourke tells in this, the first  
of a series of three articles, what he thinks

**What's New in Wood Preservation** ..... 558  
Addresses and committee reports presented at the recent American Wood  
Preserver's convention provide much interesting information

**Snow Blower for Switches** ..... 561  
Description of a new device designed to keep switches free of snow by  
means of compressed air

**New Station Moved and Modernized** ..... 562  
How the Delaware, Lackawanna & Western revamped an old station at  
Corning, N. Y., and made it look like new

**How to Prevent Shocks from Portable Electric Tools** ..... 564  
Dr. Edwin L. Lotz points out the precautions to be taken in operating  
electric tools, and the various effects of electric shock

**News Briefs in Pictures** ..... 566  
Koehring Southern's first shovel—D&RGW's new Grand Junction yard—  
Caterpillar D8 helps load crushed rock

**What's the Answer?** ..... 567  
How to Clean Oil-Storage Tanks      Improvements Needed in Track Tools  
Oxyacetylene Method of Cropping      Do What with Chemically Killed Brush?  
Rail      Platform Decks in Diesel Repair Shops  
Inspecting Old Creosoted Piling in  
Trestles

**Products of the Manufacturers** ..... 574

**News of the Month** ..... 578

MERWIN H. DICK  
Editor

HENRY E. MICHAEL  
Associate Editor

FRED W. SMITH  
Business Manager

RADFORD E. DOVE  
Associate Editor

RALPH M. SCHMIDL  
Associate Editor



## Southern Installs G-E Sodium Vapor Lamps to Speed Hump-Retarding at Norris Yard

The Southern Railway System has installed G-E sodium-vapor lamps to speed car identification and add extra safety to night-time hump-retarder operations at its modern Norris Yard in Birmingham, Ala.

Mounted near ground level, these G-E sodium-vapor lamps shower soft light with minimum glare on passing cars, so clerks can record car numbers swiftly and accurately. At the crest of the hump, pin-pullers work with top visibility right where it counts—down

low and in-between the cars. This permits fast, safer switching to any of Norris' 56 different classification tracks.

For excellent visibility, night in and night out—even under foggy weather conditions—specify G-E sodium-vapor lamps for your humping and retarding operations.

For further details on modern railroad floodlighting, contact your nearest G-E apparatus sales representative. General Electric Company, Schenectady 5, New York.

152-46A

*You can put your confidence in—*

**GENERAL  ELECTRIC**



---

**Editorial Comment**

---

**Success —****Means Getting Back to Fundamentals**

What is it that, in the final analysis, determines whether a maintenance-of-way department is to function with optimum effectiveness? Is it the number and character of the machines used? Is it the quality and durability of the materials that are selected for replacement purposes? Is it the experience and know-how of the supervisory personnel and of the men who do the work?

Unquestionably, all these factors are very important. They are all necessary if a good job is to be done. But something else is needed if they are to be integrated into an efficient and effective maintenance policy. That "something else" is a quality that was quite frequently stressed in the earlier days of railroading. But in this more materialistic and "enlightened" age it seems to have been pushed far into the background, that is, when it is given any consideration at all. In fact those who claim adherence to it do so at the risk of being branded impractical or overly sentimental.

To keep our objectives, and the means of obtaining them, in the proper perspective, it is necessary that we be reminded from time to time of the "something else" mentioned in the foregoing paragraph. No better words for restating it can be found than those used in a recent address before the Maintenance of Way Club of Chicago by C. G. Grove, president of the American Railway Engineering Association, and chief engineer of the Pennsylvania's Western region. He referred to it as the "most important" part of our work.

"It is the one quality throughout the years and all over our continent," he declared, "that has been the enviable mark of our department. This earned reputation has been brought about by the sterling attitude of our

men. I speak of the *devotion to duty* by maintenance-of-way men of all ranks. With it goes our cherished pride of accomplishment. It runs as a golden thread through the pattern of our 'day and night, storm and sunshine' struggle to maintain our railroad and finish our jobs on time."

To round out his concept of the basic rules which will help M/W departments eclipse the accomplishments of the past, Mr. Grove suggested that his audience practice "honest analysis," indulge in "conscientious and able planning," give "careful attention to every detail of work," and "practice daily the precepts of the Golden Rule. . . ." This latter he referred to as the "morale-building rule of the ages. With it an organization can achieve results that would otherwise be unattainable."

There you have a complete formula for achieving success in your work. The need for devotion to duty needs to be emphasized. This quality is important in any line of work, but it is indispensable in railroading, particularly in the M/W department. This is so because the obligation of the railroads to render continuous service frequently requires extraordinary effort on the part of M/W employees during emergencies—effort that must necessarily be carried on temporarily in disregard of regular hours or personal comfort.

What is important to remember is that there is personal reward in having a sense of devotion to your work—a reward that goes beyond material considerations. This is the sense of satisfaction that comes from having done a job well, particularly if it was accomplished under difficulties or in the face of obstacles. Old-fashioned? Perhaps, but people seemed to get along pretty well in the old days despite such "impractical" ideas.

**DRAINAGE DISTRICTS—*****Shouldn't Bridge Maintenance Be Included?***

FROM THE TIME they are undertaken, drainage districts are a "pain-in-the-neck" to the railroads, and they continue to be just that for many years. Invariably, to help a group of farmer landowners drain a lowland or swamp, a railroad is included in the district and is assessed heavily for the "benefits" that it will derive from the proposed new channel.

In most instances, instead of producing benefits, such projects turn out to be detrimental to the railroads. After the channel is straightened, its center line frequently intersects the railroad at an acute angle or it crosses with S-curves. In either case, the district plan often calls for a longer railroad structure than is presently maintained or an entirely new bridge. Although the railroad is compensated in part for the longer or new structure, it is "stuck" for its maintenance from then on.

After the project is completed, everyone is happy for awhile. It drained the swamp, didn't it? And the drained land, after it has "sweetened," can be farmed or turned into pasture. But nature has peculiar notions of wishing to handle its own drainage. While the new channel is in its freshly cleaned condition, a heavy rainfall will cause the drainage water to erode the sides of the S-curves, to work back on the railroad embankment, and even to scour out the foundation material. Drift material will lodge in front of the bridge opening and the railroad will send men, and equipment when required, to remove it. But who clears away the drift from above and below the bridge opening? You know the answer.

The terrain, being relatively flat, causes the drainage waters to deposit silt, and the drift adds to the accumulation. Weeds grow along the sides and eventually the drainage ditch fills up. The railroad continues to maintain the long bridge opening but no one takes the responsibility of maintaining the drainage ditch. By this time the enthusiasm for the "wonderful benefits" from the project has died down and no one is concerned enough to want to spend more money to clean the ditch or is worried about the railroad and its bridge. The original proponents for the project have now adopted the viewpoint that, if the railroad is not satisfied with the condition of the ditch, it is free to clean it out at its own expense. But, let the railroad cut down the size of the opening just one span and see what a hornet's nest is stirred up!

What is the answer to this problem? Should the railroads not be allowed more compensation at the time of the damage hearings than the original cost of the new or longer structure so as to cover future maintenance? If this seems a justifiable stand—and there have been enough drainage districts formed in the past to permit evaluating the maintenance costs—what can be done to gain its acceptance? Since the local residents

of a newly formed drainage district seem to have control over the courts where the hearings are held, it is obvious that a higher and more impartial authority, should be appointed to render a decision in such matters.

**INGENUITY—*****Puts Modern Inventions to Work***

NO OTHER FIELD, except possibly the construction industry, offers such profitable opportunities for exercising initiative than does railroad maintenance-of-way and structure work. While it may appear that such work follows the same pattern on all roads, it can be shown that there are innumerable opportunities for the use of ingenuity and initiative by individuals. One such instance comes to mind that involved the application of an existing invention in an unusual manner.

The device so applied was a Polaroid camera, and it was used to determine the yardage needed to fill a large void caused by a tunnel cave-in. It seems that the brick arch of a tunnel had failed and allowed a large quantity of earth to fall into the tunnel. Working from within the tunnel, the material was cleared away, forms were erected, and the failed portion of the arch was restored with concrete. But a large void remained above the tunnel and it was feared that the 60 ft. of earth cover over the tunnel would settle and cause damage to residences situated above.

A pipe 12 in. in diameter was sunk from the surface and the top of the void was found to be at a depth of about 40 ft. However, some means was needed to determine the size of the void and how much material was required to fill it completely. This was solved by mounting the camera on a pipe and lowering it to various depths within the void. The distances to the side walls at each depth were determined by setting the camera at various foci and setting off flash bulbs until sharp pictures were obtained. The focal distances gave the desired answers and when a sufficient number had been taken, it was possible to make a close estimate of the size of the void to be filled.

The required amount of concrete was pumped into the void, and when the job was finished there was no doubt but that the hole had been completely filled.

Another invention, of more recent vintage, that would seem to have applications in the railroad maintenance field is an underwater television apparatus as developed by an English firm. Is it not possible that this equipment can be used to advantage for the inspection of piers and other underwater structures in situations where it is not practicable to use divers?

Doubtless there are other modern inventions that can be applied to the railroad maintenance field. Ingenious and imaginative minds will find applications for them.



**Mechanization of All Phases of Track Work Speeds Completion of . . .**

## **Big Union Pacific Line Change**

**Modern machines and methods previously proved effective for normal maintenance work overcome extensive weather delays to complete project months ahead of schedule.**

● Sherman Hill, Wyo.—the highest point on the Union Pacific—has been by-passed again, this time by a new \$16 million 42-mile line. The reasons for the new line and the operating advantages which it will produce for the railroad are related separately on following pages. From a construction viewpoint the project is outstanding because of the phenomenal rapidity with which it was carried out, a record

made possible by the use of mechanical equipment and progressive methods in every phase of the job from the initial grading to the final dressing of the new track.

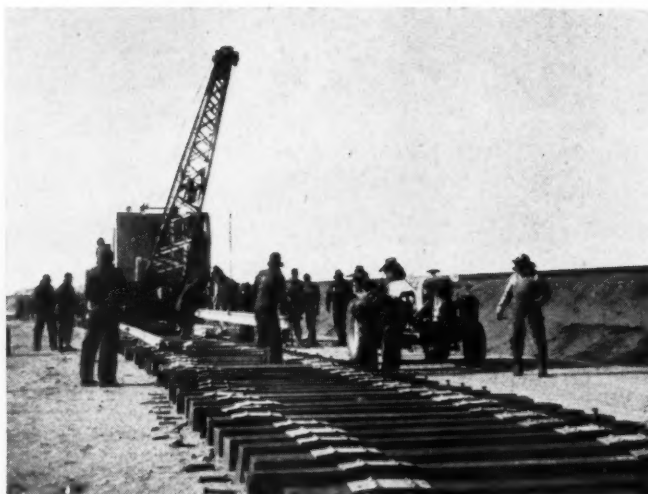
Building of the new line was marked by spectacular grading feats, including the construction of a 775,000-cu. yd. fill 157 ft. high and 530 ft. wide at its base, as well as a rock cut 110 ft. deep which required the removal of more than

300,000 cu. yd. of material. In keeping with the tradition of difficult railway construction in this vicinity, this grading work was of such proportions that it would have been impossible of achievement either when the line was first built in 1868, or when it was relocated near the turn of the century or even when double tracked a little over a decade later. Certainly it could never have been completed at any time in a single year, as it was, except for the technological improvements that have been made to grading equipment in the last 30 years and for the better methods of work these improvements fostered.





**RAIL LAYING** was done by two cranes. While one laid rail, the other supplied it.

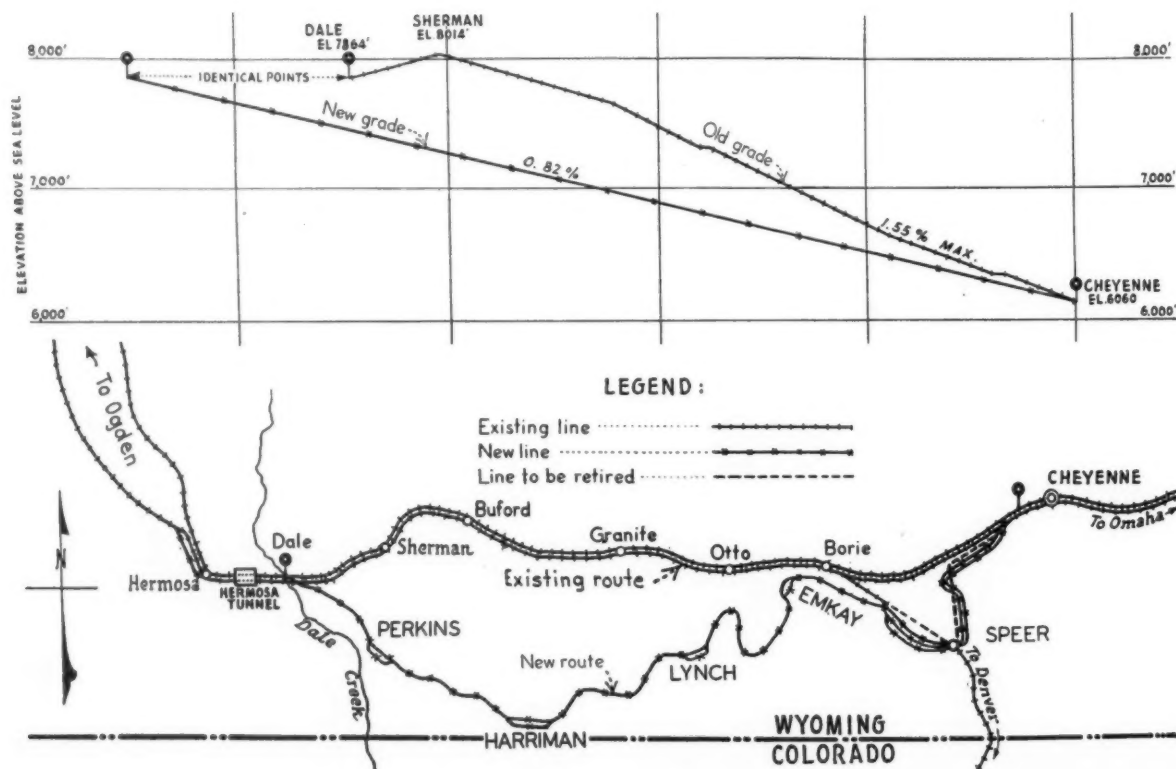


**A TRACTOR-COMPRESSOR** ran alongside the track, supplying air to pneumatic wrenches to bolt the rails together as they were laid.

By the same token, neither could the track have been laid so expeditiously that the last rail was installed on the same day the grading was complete—one year, less one day, from the start of construction—had it not been for efficient track-laying machines, fast means of transporting materials and profi-

cient teams of workers, well schooled in what are now normal rail-laying methods. Above all, the new line could not have been ballasted and tamped ready for service in less than 2½ months after grading was complete, had not modern tamping machines been available to overcome the de-

lays caused by the notoriously bad weather which plagued the track forces during most of April. These accomplishments become even more interesting to maintenance-of-way men when it is noted that they were made possible, not by special equipment capable of practical use only in construction work, but by



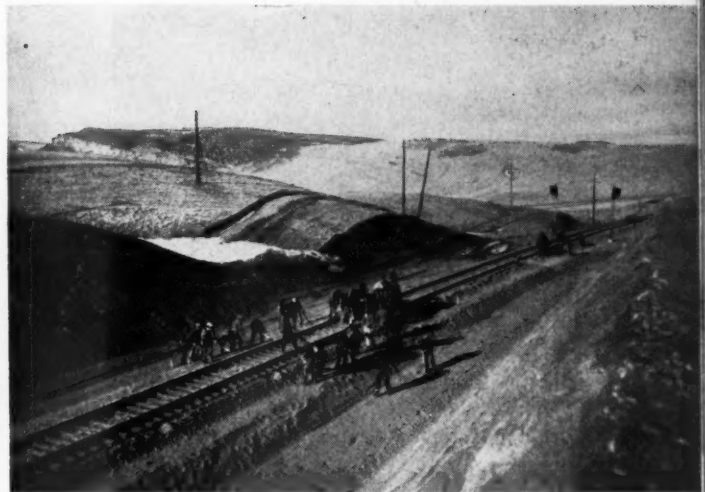
**NEW LINE** built south of famous Sherman Hill is characterized by a uniform gradient compensated on curves, by the lack of

bridges, by high fills and deep cuts, and by metal snow fences. Note sidings named for high-ranking officers.





**POWER JACKS** were always used for raising the track ahead of all tamping machines including the . . .



. . . **ELECTRIC TAMPERS** which were employed, in general, to make the first raise of five to eight inches.

devices and methods adapted from routine track-maintenance practices.

#### How Track Was Laid

Grading was started on February 18, 1952, at both ends of the project. By July enough finished

subgrade had been completed on the east end to permit the track-laying work to get underway. Even with this much of a start, the track laying caught up to the grading before very long and the track gang was moved to the west end where it worked until again stymied by the grading operations,

which were being carried out at this end through tough rock. This see-saw method continued until the last rail was installed on the same day grading was completed.

Track-laying methods, in general, followed conventional practice with two possible exceptions: (1) The method of distributing

#### Line Built Longer to Save Travel Time

The new line built by the Union Pacific between Cheyenne, Wyo., and Dale, (see map and profile) has four primary advantages over the old, which will be retained primarily for down-grade (eastbound) traffic: (1) It reduces the maximum westward grade from 1.55 per cent to a uniform 0.82 per cent, compensated for curvature; (2) it thereby increases locomotive utilization, effecting considerable economy; (3) it shortens the running time between Cheyenne and Dale by 15 min. or more, despite its being 9.54 miles longer than the old line; (4) it provides an alternate route, widely separated from existing tracks, thus assuring continuity of service in case of wartime disasters or other emergencies.

Starting at the western edge of Cheyenne, the new line turns southward as double track extending for six miles to Speer where it connects with the line to Denver. Rising on a uniform gradient, the two tracks—one called the Fourth Main and the other, Third Main—pass under the old single-track line to Denver at one point and over it at another, dramatically illustrating the rolling character of the old grade. The Fourth Main was placed in service in September, 1952, and the old line which it replaced has been abandoned.

From Speer, the new line, now single track, meanders generally westward, first in long "loops," then in shorter curves which are never sharp (maximum 2 deg. 20 min.) but which help to keep the line rising uniformly at 43.3 ft. mile, compensated on curves, to a point within 800 ft. of the Colorado border at Harriman, and thence to a junction with the present line at Dale. At that point it has traversed at least 111 major fills, and about as many cuts. In general, the fills were constructed with 1½:1 slopes and the cuts with 1:1 slopes, except where slight deviations were required to fit special conditions of the soil or deteriorated rock.

The highest fill extends 165 ft. above Texas Creek which flows through it in a 60-in. corrugated Armo pipe encased in concrete. This fill is 530 ft. wide at the base, made somewhat wider by an access road about half-way up, and contains more than 775,000 cu. yd. of material. The largest cut, located about 1½ mi. east of Dale, the west end of the new line, is 110 ft. deep and required

the removal of a total of more than 300,000 cu. yd. of granite rock.

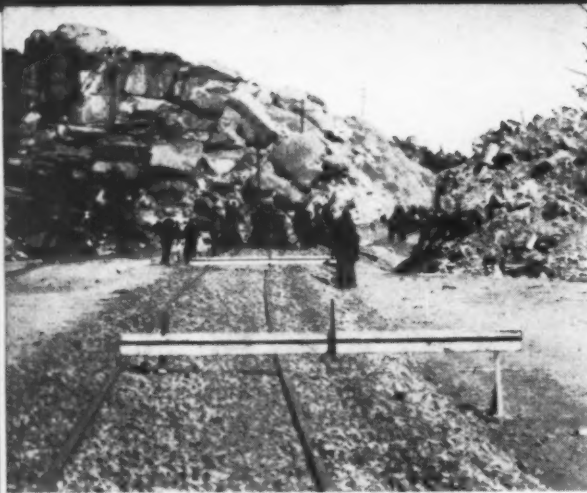
Strategically spaced along the new line are five passing sidings—Speer, Emkay, Lynch, Harriman, and Perkins. Each is 7200 ft. long between headblocks, or about 6400 ft. between clearance points. A 1500-ft. set-out track having No. 10 switches at each end leads from each siding. All the No. 14 switches at each end of the passing sidings are power operated, being controlled by a C.T.C. machine at Cheyenne. The line will be signalled for movements in both directions.

The track was laid with 133-lb. rail, supported on treated 8-ft. ties resting on 8-in. of Granite ballast of which about 177,000 cu. yd. were used. About half of the rail laid in the new line was end hardened at the mill while the remainder was hardened in the field, after it was laid.

Most of the supporting operating facilities along the new route are concentrated at Harriman. These include a water storage tank, a standpipe, a coaling station, three steel section toolhouses and a number of frame sections residences.

Prior to the construction of the new line, two water tanks were located at Granite, 10 miles from Cheyenne. To fill these tanks, water was pumped from nearby springs under the watchful eyes of pumpers. To supply the new facilities at Harriman, two new centrifugal pumps were added to these facilities at Granite. These pumps now pump water to a new reservoir tank constructed about one mile north of Harriman. From this reservoir, water now flows by gravity to the storage tank at Harriman and these to the standpipe. When the new pumps were installed at Granite, the entire pumping operation was made automatic.

Finally, the line was built without a single bridge. Instead of bridges, all waterway openings and underpasses, whether for county highways, private roads or as cattle passes, were constructed of metal-pipe culverts. For these purposes, a total of twenty-three 180-in. and two 150-in. Multi-plate culverts were installed, together with a large number of 72-in. Multi-plate and 60-in. ready-made corrugated pipe culverts. Two of these, under high fills, were encased in concrete. To provide a good footing for stock, a gravel fill was placed in the bottom of the cattle underpasses and then paved with 4-in. of bituminous material.



**SPOT BOARDS**, resting on the grade stakes, assisted in sighting each raise ahead of the power jacks.



**TWO MECHANICAL TAMPERS** of this type were employed in tandem to compact the ballast solidly under the final raise.

ties; and (2) the method of supplying the rail to the rail-laying cranes. All "jewelry" such as spikes, bolts, spring washers, tie plates and grease cakes, was distributed first by truck from cars placed on the nearest setout track on the old line. When this was done, the ties were distributed from semi-trailer trucks driven on the subgrade. As rapidly as possible, thereafter, the ties were placed along the center line and spaced 22 to the rail by using short spacing sticks. A small gang of men placed tie-plates on each end of the bored ties, and men following them tacked the plates on one side by means of an outside rail-holding spike driven into one of the bored holes in each of the ties.

Rail was shipped to the new line on flat cars and laid by two rail cranes.

The second crane merely kept the rail-laying crane supplied with rail throughout the day without delay while waiting on rail. This method, more than anything else, kept the track laying moving ahead at a steady 4000 ft. of track per day.

#### Installation of Joint Bars

As the rail-laying crane set the rail on the tie plates, grease-caked bars were applied and one bolt inserted at each joint by three men. For speed this bolt was tightened with an air wrench driven by an air compressor on a tractor unit running alongside the track. The crane organization consisted of a crane operator, a tongman and two other men, one of whom held the rail-end shims.

Immediately behind the cranes and their cars of rail, two men applied the remaining bolts, running the nuts up slightly by hand so two bolting machines could then

tighten them completely. A 6-man gaging gang, consisting of 1 nipper, 2 spikers on each side and a man with a track gage, followed spiking by hand every fourth tie to gage. Six men then set all the remaining rail-holding spikes so that they could be driven by air hammers powered by an on-track compressor. Finally about eight men, if that many were available, applied rail anchors. The rail laying work was completed by a 14-man gang lining the track to stakes, which had been set in advance, preparatory to the dragging of granite ballast by a work train.

#### How Track Was Tamped

Several tamping methods were employed at various stages of the work. Essentially they were all designed to provide a minimum of 8 in. of well-compacted ballast under the ties. Tamping operations began on the east end of the project on one of the two tracks built from Cheyenne to Spear. Designated as the Fourth Main, this track, about 6 miles in length, was scheduled to be the first placed in operation to handle the Cheyenne to Denver traffic. By speedy track work this was accomplished in September 1952, considerably ahead of schedule.

#### Track Raised 8 Inches

This accomplishment was made possible by raising the entire Fourth Main, including its new connection to the Borie cut-off, a full 8 in. at one time. For this work two 4-tool electric hand-held tamping outfits were used in a normal manner, with the track being raised by a power jack to spot boards on grade stakes. After the track was put in service and trains had operated over it for awhile, the track

was spot tamped to equalize whatever settlement had resulted from traffic and then was turned over to the division forces for regular maintenance.

After the Fourth Main had been raised, the tampers started at the east end of the Third Main (the new westward track running from Cheyenne to Dale) and raised it too, a full 8 in. with the electric tampers. This work continued steadily westward, at  $\frac{3}{4}$  to  $1\frac{1}{2}$  miles per day, for about 30 miles to Harriman. The raising work was then continued with the electric tampers on a somewhat lighter lift, for about six miles to a point approximately one mile east of Perkins.

#### Matisas Tamp Final Raise

At this juncture—about March 1, 1953—two Matisa tampers arrived for use in carrying out all the track raising remaining—a final raise from the east and almost to Perkins and both a first and final raise from there to the end of line at Dale Jct. To do this, raising operations were again reorganized with the objective of putting the track into service about the first of May. This schedule required that an average of more than a mile of track per day had to be tamped for two full months.

Starting to work at the east end on March 4, the two Matisa machines, working in tandem with each compacting the ballast under every other tie, tamped 130,211 ft. of track in the next 20 working days. This averaged 6,511 ft. or  $1\frac{1}{4}$  miles per day. During this time the lowest amount tamped was 2673 ft. when only one machine was in operation, and the largest production was 8,034 attained on each of two days.



**EACH MACHINE** tamped every other tie. Making one insertion of the tamping bars, the two units averaged about 1 1/4 miles per day.



**TWO-WAY RADIO** speeded completion of the line, according to F. W. Tomlinson, assistant engineer.

good weather and the nearing deadline of May 1, the raising and tamping units stepped fast in the fourth week of April, until they pressed close on the heels of the survey party establishing final line and grade. During that week, the Matisas tamped 41,979 ft., averaging 8,396 ft. per day. On each of two days of the week they tamped more than 9,000 ft. and on two others they tamped 8,700 ft. or more. Entering the home stretch with such a good beginning, the tampers were never "headed" and sped down to the final wire at Dale before the deadline which had been set as May 1.

#### Tamping Organizations

In general the basic organization of forces was the same for raising the track whether ahead of electric tampers or Matisas, whether on first or final raises. In most cases two spot boards were used with one end resting on a grade stake and the other on blocks on one rail. To lift the track a power jack was used in all cases. One man handled the level board while the foreman sighted the tie ahead of a joint and shovel tampers worked enough ballast under the center tie of the three-tie supported joints. Six shovel tampers were usually enough to keep up to the jack except when the ballast had been dragged very heavy. In that case several men and an assistant foreman followed with track jacks pulling out the "holes" held down by the extra ballast, and tamping enough ties to hold the grade until the tampers consolidated the tie beds. Enough men followed the shovel tampers to keep up to them while throwing as much ballast into the tie cribs as the amount distributed dictated.

Track-lining work was carried

out in a series of operations all predicated on the amount of other work in progress. In general the track was first lined roughly to stakes as it was laid. It was then lined ahead and behind the power jacks during the first raise and behind them on the final raise. In the end, the track was given a careful detailed lining behind the final tamping and ahead of the ballast-dressing operation.

#### Radio a Big Help

Not the least of these up-to-date devices that speeded the completion of this big job was the use of a Motorola two-way radio communication system. Installed primarily for operation of survey crews before roads were built and later to coordinate all work in the area, this V.H.F. radio system probably saved more supervision time than any other device available. At times it was indispensable. With it, emergencies were reduced to incidences, delays from break-downs in machines were reduced to the minimum, and work-train orders were kept up-to-the-minute, being altered instantaneously as conditions required. Above all, supervision, generally miles apart, conferred at will and saved untold gallons of midnight oil as a result of the installation.

Basically, the radio installation consisted of a two-way space radio relay system operating on two frequencies between transmitters and repeater stations. It could be used for two-way conversations between mobile units themselves and between a mobile unit and the office. Mobile units were installed in two passenger automobiles for the use of supervisors, in one pick-up truck assigned to the roadmaster, in a "carryall" truck used by the signal forces, in another "carryall" used by

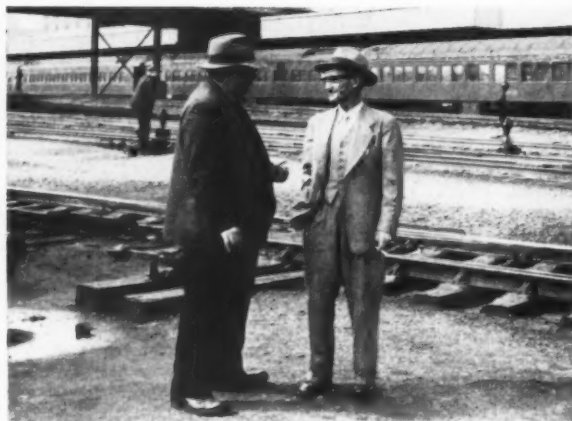
the field engineers, and in a car used by the project manager for the contractor.

#### Station Installed at Cheyenne

One of the repeater stations is located in the station building at Cheyenne. From an aerial on the depot's steeple, this relay station receives on one frequency and sends on another to the other repeater station located on top of a hill between Granite on the old line and Harriman on the new. This repeater station was required because Cheyenne is located more or less in a hollow and the mobile units would be traversing a mountainous terrain which would interfere with a signal from the Cheyenne transmitter. This field station receives messages from the depot and then relays them to mobile units anywhere in the west half of the job. In reverse operation, the mobile units transmit on one frequency to the repeater station which transmits on another to the Cheyenne station. This station, in turn, relays the messages to mobile units or to the fixed station in the construction office. In this way, the entire construction project is blanketed with a superlative communicative system.

General supervision of the planning and construction of the new line was in charge of W. C. Perkins, chief engineer and J. A. Bunjer, assistant chief engineer. Mr. Bunjer was also in direct charge of all field operations until September 1952 when he assigned the field supervision to F. W. Tomlinson, assistant engineer. R. E. Denham, was project engineer for Morrison-Knudsen, contractors handling all grading work. Company forces, in charge of a roadmaster, handled all track laying, raising and tamping work.





THE ABILITY to get along well with the personnel in other departments, especially yardmasters, is important as is . . .



THE ABILITY to delegate small jobs to trusted employees who can work alone or in small groups without direct supervision.

## Yard Track Foremen . . .

# Are Special Qualifications Needed?

By G. M. O'Rourke

Assistant Engineer Maintenance of Way  
Illinois Central, Chicago

**An underlying aspect of this subject is the problem of interesting qualified men in becoming yard foremen. Mr. O'Rourke first points out the difficulties being experienced today and the reasons for them. The student foreman plan is mentioned as a possible solution. Finally, Mr. O'Rourke lists the qualifications which he feels a yard foreman should have.**

● Before attempting to answer the question about the special qualifications required of a track foreman in a busy yard, and the special training or experience in any particular class of work that a yard foreman should have, I think we should discuss the difficulties being experienced at almost every large yard in obtaining and retaining young men capable of becoming track foremen.

As the industrial demand for labor increases in metropolitan areas railroads are finding it increasingly difficult to hire and hold young men capable of becoming yard foremen. The problem of replacing retiring foremen has been serious for several years and is becoming more

so as time passes. Efforts to interest young men in track work in railroad yards, pointing out to them the need for track foremen and the opportunities for promotion when they have secured the necessary experience, have not produced satisfactory results.

### Do Not Have Qualified Men

Many railroads simply do not have qualified men in yard gangs to promote. In large cities, where the demand for labor is acute, the trackman's compensation, they say, does not attract men who will make good foremen, and the differential between a trackman's pay and that of a track foreman, or assistant foreman, they say, is so small that some of the older qualified men outside of the terminal or yard will not take the higher-rated jobs because they feel the increase in responsibility is not worth the increase in wages. Cases are known of men returning to country sections from yards in industrial centers, saying there was not sufficient inducement to offset the higher cost of living.

Most large railroad yards are located in or near cities where other industries are more attractive to the younger men in that they are given better working conditions—that is, working in a factory or plant affords protection from the elements, and in some cases working on machines is not as difficult as working on the maintenance of yard tracks.

We have several fairly well-educated trackmen on so-called "country" sections who will not leave their present location to assume the responsibility of a yard-gang foreman. It is very hard to get a married man with a family to take one of these jobs. In many cases, we are required to place men in charge of yard sections who have had very little experience or training in the supervision of men or the handling of important track work. It is getting to the point where the occasional man who does bid on a yard foreman's job and is awarded it on a seniority basis, must then be taught the duties and responsibilities of a yard foreman, having come into the yard from "outside."

### Student Plan Has Merit

In yard work most roads have three classifications of personnel: foremen, assistant foremen and trackmen. There has been some discussion from time to time in regard to having track apprentices or student foremen from which to develop foremen. A young man advanced to track apprentice or student foreman should be excepted from any force reductions, as the uncertainty of continuous employment is one of the reasons for reluctance in entering track work.

As a general rule, we are told, the student-foreman or track-apprentice plan, where given a trial, has worked out satisfactorily. The





**THE ABILITY** to train men to work with a high regard for safety whether in the gang or alone, is needed along with . . .



**THE ABILITY** to be able to maintain slip switches, movable point crossings and other special trackwork.

students or apprentices are high school graduates and show promise that is encouraging. They are trackmen who demonstrate supervisory qualities and are advanced to assistant foremen as quickly as practicable. These individuals are expected to study operating and maintenance rules and to make every effort to increase their technical knowledge and their proficiency in applying the principles of supervision. Manuals, pamphlets, circulars and other printed matter stressing good principles of management are furnished apprentices and student foremen and they are encouraged to study in their spare time. Some satisfy their ambition for self-help and self-improvement through study courses in track work in correspondence schools.

One executive, expressing his interest in the proper training of young officers in the employ of his railroad stated that there is "... considerable time, energy, patience and money tied up in these young men as they come along, and we cannot afford to lose this investment unless it develops, by their acts, that our judgment has been in error. Of course, when that is definitely determined it is better for us to take action to correct it promptly than to delay such action."

#### Qualifications Are Listed

Thus, emphasis is placed upon the importance of selecting men with the special qualifications required of a track foreman in a busy yard. We think these men should have the same personal qualities of honesty, dependability, initiative and loyalty required of all section foremen. They should also have:

- The ability to get along with personnel in other departments with whom they must work, especially the yard masters. Without it they will soon find themselves at odds with the other departments, and they will be unable to accomplish many of their aims.

- The ability to delegate small jobs to trusted employees. The yard foreman has many small jobs that require the services of one or two men. He must assign these jobs to men who will assume the responsibility of working alone inspecting track and switches, oiling switches, filling and maintaining switch lamps, etc.

- The ability to train men to work with a high regard for safety whether in the gang or alone.

- The ability to utilize spare minutes productively, as interruptions are frequent in yard work.

- An appreciation of good housekeeping, and of the need for keeping leads and premises, especially near buildings, clean of debris.

- The ability, when emergencies arise, to be able to: Determine the cause of derailments; Deal adequately with snow storms; Set rerailling frogs, blocks, etc., to reraill locomotives and cars; Repair damaged switches quickly; Close doors on coal, cinder and stone cars, that have been knocked open; Maintain slip switches, movable point crossings and other special trackwork.

If possible, foremen for yard work should be selected from men who have served their time as trackmen or assistant foremen in this kind of work. Section foremen on many railroads have seniority rights over the territory coming under the jurisdiction of one division engineer, whose territory may include both yards and terminals and main-line sections, which makes it very difficult to train a man for a specific job. If an "outside" or "country" section foreman does, perchance, bid in a yard section considerable time may elapse while he is accumulating the experience al-

#### First of Three Articles

Our What's the Answer department recently posed this question: "What, if any, are the special qualifications required of a track foreman in a busy yard? Should he have had special training or experience in any class of work?"

Judging by the number and character of the answers received to this question it touches on a matter of considerable current interest. Most of the answers received were printed in the "What's the Answer" section of the May issue. However, because of space limitations, it was necessary to withhold three of them for presentation separately. The accompanying article by Mr. O'Rourke is one of these. The other two, by Malcolm Condon, general yard foreman, Erie, and J. W. Diffenderfer, supervisor of track, Pennsylvania, will be printed in early issues.—Editor

ready held by a yard-trained man.

In the preparation of this reply I am indebted to our Chicago Terminal division engineer and supervisors of track who concur in my opinion that the question is one that could be worthy of the attention of the Roadmasters and Maintenance of Way Association, and the American Railway Engineering Association. I am sure that the officers of such organizations appreciate the problem that faces us and that we can depend upon them to give complete and sympathetic cooperation in advising and directing the training of young men on whom will rest the future of the maintenance of yards and terminals.



Roy Lumpkin, mgr. tie & timb. dept., Rock Island; C. S. Burt, asst. to v.p., p.&s. IC; and P. D. Brentlinger, forester, PRR.



H. J. Kreher, Inland Steel Company; and H. R. Duncan, superintendent timber preservation, Burlington Lines.



L. C. Colister, superintendent treating plant, Atchison, Topeka & Santa Fe; and K. T. Scudder, lab. technician—Vapor Drying dept., Taylor-Colquitt Co.



H. M. Harlow, assistant general supervisor bridges & buildings, Chesapeake & Ohio; C. E. Thomas, Jr., creosote chemist, C&O; and R. R. Clegg, district sales manager, American Lumber & Treating Co.

## Timber Treaters Discuss ...

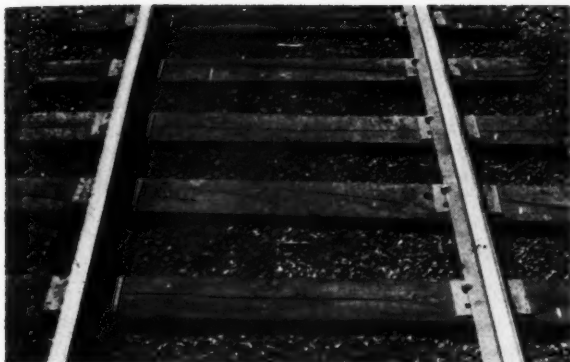
# What's New in Wood Preservation

Addresses and committee reports presented at forty-ninth annual convention of the American Wood Preservers' Association bring out much information of interest to railroad men. Action was taken regarding several specifications for preservatives and methods of treatment.

● The effectiveness of incising as a means of extending the life of hardwood ties, the performance of laminated members in timber bridges in railroad service, and the advantages of handling forest products, including crossties, in packaged units—these were some of the subjects discussed at the forty-ninth annual meeting of the American Wood Preservers' Association, which was held at the Hotel Cleveland, Cleveland, April 28-30. With the usual large contingent of railroad men present, the program consisted of 14 addresses and 26 committee reports, nearly all of them on subjects of direct or indirect interest to railroad users of treated wood. All sessions were under the general supervision of R. H. Bescher, manager of technical department Koppers Company, Inc., Orrville, Ohio, and president of the association.

The incising of hardwood ties "merits immediate and serious con-

sideration by users not taking advantage of this means of obtaining more for each dollar expended on ties," declared E. Roger Rand, tie and timber agent, Boston & Maine, Boston, in an address on "The Value of Incising Hardwood Ties." The practice of incising hardwood ties was started on the B&M, according to Mr. Rand, because of the railroad's desire to use species of wood native along its right of way. While oak ties are relatively scarce in northern New England, mixed northern hardwoods are relatively plentiful, he said. For this reason, the B&M "faced a decision of obtaining practically all ties consumed off line if insisting on oak, or choosing to use certain species of mixed hardwoods." The hardwoods referred to by Mr. Rand are designated in the A.R.E.A. specifications as Group "Tc" which includes beech, birches, cherries, gums and hard maples. Although available data indicate that long service life can be



**UNINCISED TC hardwood ties on Boston & Maine after 10 years service. All such ties are now being incised on this road.**



**INCISED hardwood ties on the B&M, also after 10 years. Mr. Rand said "Incising has materially reduced serious checking."**

obtained from such ties it has been the experience of a great many railroads, said Mr. Rand, that early failures have occurred as the result of checking beneath the treated zone, which causes the tie to fail from center rot and crushing under the rail bearings.

He went on to explain that early failure of "Tc" hardwood ties could be prevented if the large serious checks in the faces could be eliminated and deeper penetration of the preservative obtained. To achieve these ends the B&M has been incising a portion of its "Tc" hardwood ties prior to seasoning for approximately 15 years and all hardwood ties since 1949. "It has been our experience," said Mr. Rand, "that incising has materially reduced serious checking in faces of these ties and has increased the average depth of penetration into the heart faces. Since the cost of incising represents only about three per cent of the cost of tie,

and a modest estimate of added average tie life through incising could not be placed under 10 per cent, it is evident that a worth while saving is made. In addition to the saving of the tie itself, savings would be made in labor through less frequent tie renewals."

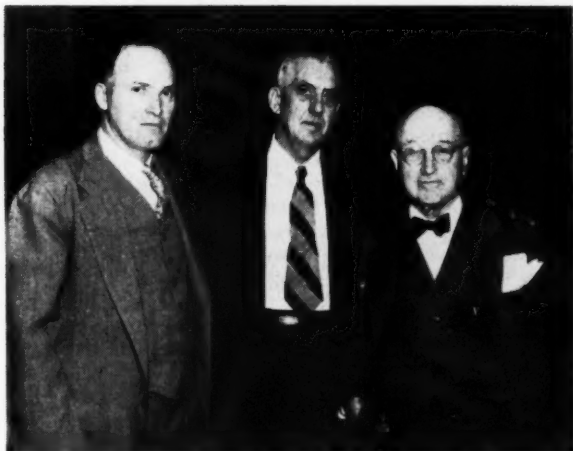
#### **Laminated Members in Bridges**

Developments in connection with preservative-treated laminated timber received considerable attention during the meeting. The performance of several installations of glued, laminated timbers in railroad service was described in the reports of the Information and Technical Development committees. The structures inspected included a bridge on the Southern at Alexandria, Va., containing laminated southern pine timbers, a bridge on the Texas & Pacific in which the stringers are of laminated, creosoted southern pine,

and a bridge on the Atlantic Coast Line which includes stringers of laminated wood treated, after gluing, with Wolman salts or creosote, and also stringers made by treating the laminations with Wolman salts or creosote and gluing them afterwards.

The report on the Southern bridge indicated that there was no evidence of delamination or deterioration. The members in the T&P bridge not only showed no positive evidence of delamination, but checking was reported to be generally less severe than in adjacent solid stringers. The report on the ACL bridge was equally favorable.

"The service experience to date," said the report, "with laminated timbers treated following gluing, as well as the results of extensive laboratory tests, show rather conclusively that well-made resorcinol and phenolformaldehyde glue lines are not deteriorated by commercially used preservatives and fire-

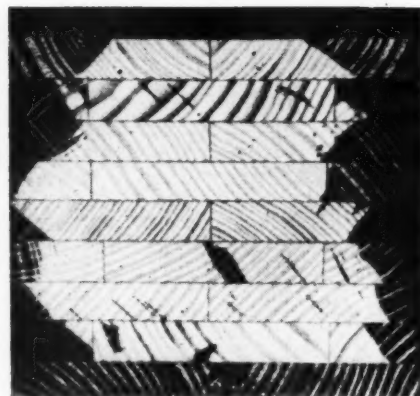
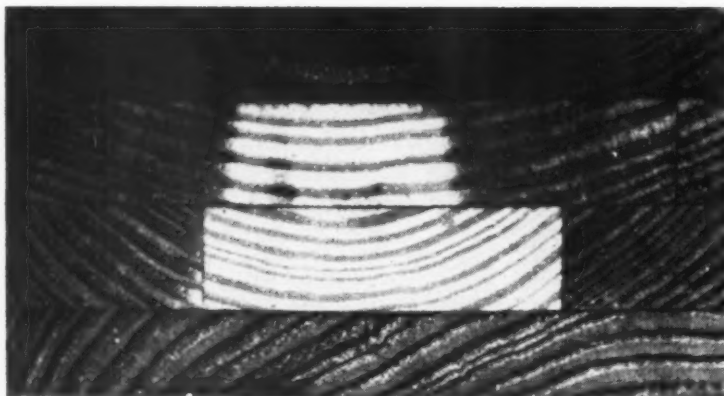


**E. R. Rand, tie & timber agent, Boston & Maine; R. W. Cook, chief tie & timber agent, Seaboard Air Line; and Roy M. Edmonds, secretary-treasurer, Railway Tie Assn.**



**D. B. Mabry, manager lumber sales, and John S. Penney, president, both T. J. Moss Tie Company. Measured by the attendance this was one of the largest conventions ever held by the AWP.**





CROSS-SECTIONS of 4-ft. long, end-sealed, laminated southern yellow pine timbers, pressure-treated with zinc chloride solu-

tion, are shown in these views. Note blacking effect of glue joints adjacent to top and bottom laminations.

retardant chemicals. However, the problem of obtaining deep penetration and good distribution of preservatives in laminated timbers has not been completely solved and requires added attention. Because of the importance of this problem, there has been continued interest in treating laminations prior to gluing."

Technological developments in the production of preservative-treated laminated timbers were described in a comprehensive report by representatives of the Forest Products Laboratory, Madison, Wis. The report first showed how the developments in this direction have been accelerated by improvements in glues, and then went on to discuss, first, the gluing of treated wood and, second, the treatment of laminated timbers after gluing. It was stated that the gluing of treated wood has definite advantages in that it may permit production of large members thoroughly impregnated, but that on the other hand, the treatment of laminated timbers after gluing makes it possible to apply the preservative after all cutting, boring and other framing have been completed and thereby helps to assure a complete protective coating of the surface.

#### Lumber in Packaged Units

The possible savings and advantages of handling forest products in packaged units, such as when bundled by steel strapping, were discussed in an address by Frank E. Houck, manager of sales, Steel Strapping Division, Brainard Steel Division, Sharon Steel Corporation. Mr. Houck stated that the matter of packaging lumber in units has been discussed with the mainte-

nance-of-way personnel of many leading railroads, and that the "general opinion expressed has been favorable and preparations are underway for adoption of this method of handling." The material is strapped into unit packages to facilitate handling, and tests are underway, according to Mr. Houck, to determine the feasibility and possible advantages of treating lumber in packaged units.

With ties—cross, turnout and crossover—a package unit has been developed and used, according to Mr. Houck. "Crossties have been bundled on the tram after treatment by means of tight and flat bands. Banding after treatment is necessary so that proper penetration is obtained—particularly with the tightbanded units. These units are then handled by the bands. The saving in man-hours is not as great when tight bands are used as when employing the slack-band method."

#### Other Recommendations

A number of recommendations involving standards and tentative standards of the association were made by the various committees. For instance, Committee C-20, Fire-Retardant Structural Lumber, offered for adoption as a tentative standard a specification for the pressure treatment of fire-retardant structural lumber. "Among the preservative committees, Committee P-2, Creosote and Creosote-Coal Tar Solutions, offered for adoption as tentative standards a revised Standard for Creosote for Brush or Spray Treatment and a revised Standard for Creosote-Coal Tar Solutions."

Committee P-4, New Preservatives, reported that during the past

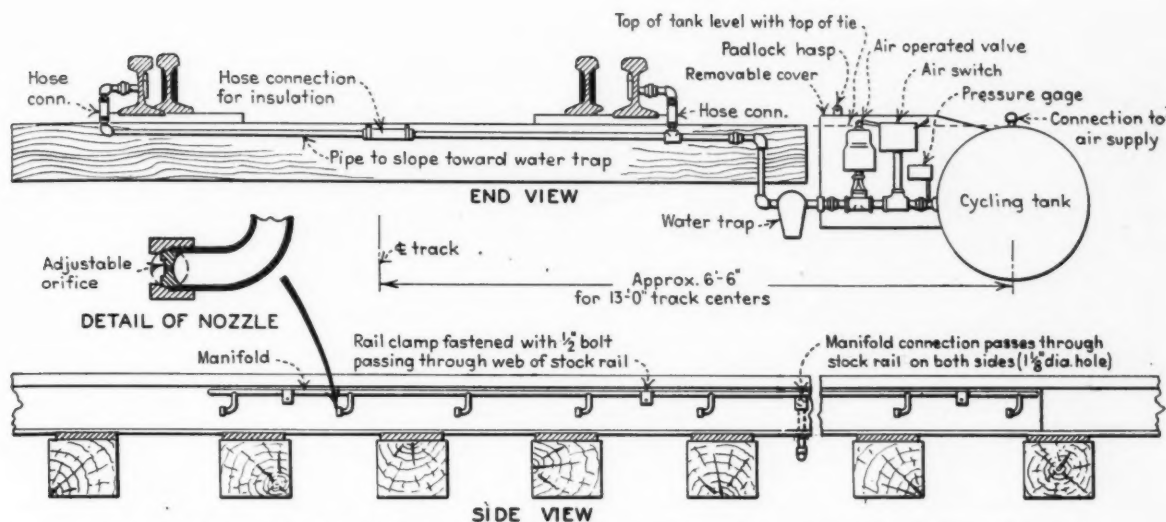
year it had done further work on methods of analysis of water-borne preservatives and has also followed the results of field tests and service tests on these preservatives. These include Boliden Salt (chromated zinc arsenate), Chemonite (ammoniacal copper arsenate), Greensalt (chromated copper arsenate), Celcure (acid copper chromate), and Copperized CZC (copperized chromated zinc chloride). Tentative standards for these preservatives had previously been adopted. Since the results of test of the preservatives continue to be favorable "whenever adequate retentions have been used and good treating practice has been followed," the committee recommended that the tentative standards as previously adopted be confirmed as standard.

All the committee recommendations mentioned in the foregoing were approved.

#### New Officers

In the election of officers P. D. Brentlinger, forester, Philadelphia, Pennsylvania, was advanced from first vice-president to president; I. C. Miller, vice-president, T. J. Moss Tie Company, St. Louis, was promoted from second vice-president to first vice-president; and A. S. Daniels, Texas & New Orleans (Southern Pacific Lines in Texas & Louisiana), Houston, Tex. was elected second vice-president. Newly elected members of the Executive committee are B. D. Howe, chief tie and timber inspector, Louisville & Nashville, Louisville, Ky., and P. B. Mayfield, technical consultant, Barrett Division, Allied Chemical & Dye Corp., New York. W. A. Penrose, was re-elected secretary-treasurer.





DETAILS of installation and construction of the Racor Snow Blower. Air is filtered before entering cycling tank.

## New Winter Tool . . .

# Snow Blower for Switches

• The Racor Snow Blower—a device designed to keep switches free of snow through the use of compressed air—has been announced by the Ramapo Ajax Division of the American Brake Shoe Company, Chicago. The device, developed during the past three winters on the Great Northern and several other major railroads, is constructed and operates as follows:

Compressed air, from a single small compressor serving a single switch or a larger compressor with a capacity for serving several switches is passed through an air filter and antifreeze injector. From the injector the air is piped to a cycling tank installed either above or below ground adjacent to the switch. An air-actuated switch (see accompanying drawing) is connected at the outlet end of the cycling tank. This switch, which can be set, within limits, to vary the blowing cycle, operates an air valve when predetermined pressures are reached in the cycling tank.

For example, when the pressure in the tank reaches 90 psi., the switch opens the valve thus releasing the air from the tank. When the air pressure in the tank reaches, say, 90 psi., the switch causes the valve to close and the pressure in the tank again builds up to 90 psi., completing the cycle. The usual operating cycle of the device provides a blowing time (tank dis-

charge) of approximately one-tenth of the time required to recharge the tank, i.e., after discharging for 3 sec. the tank would recharge in 30 sec., etc. This timing was found to be adequate to keep a switch clear of snow during a total snowfall of 64½ in. in a period of 6 days.

Air released by the pressure-actuated valve passes through connecting pipes to the blower manifolds. Two manifolds are used per switch and are attached, one to each stock rail on the gage side, in such a manner that they cause no interference to the movement of the switch points. The manifolds, which are somewhat shorter in length than the switch points, are equipped with adjustable nozzles, or jets, at approximately 15-in. centers. When the device is operated under the recommended air pressures, air expelled from the jets (usually all aimed toward the point of the switch) at a high velocity blows snow, dirt, etc., from the region between the points and the stock rails.

At the beginning of each snow storm the compressor is set in operation by a local manual control or by using line code equipment such as in centralized traffic control systems, the motor could be controlled remotely from the dispatcher's office or any other office open 24 hr. daily.

The manufacturer states that the introduction of alcohol into the air stream by the antifreeze injector has proven quite effective in operation under conditions of heavy sleet and freezing snow, where moisture might be drawn into the compressor intake. It is also said that foreign matter such as dirt and sand, which might be blown into the switch along with snow, will be blown out by the Racor Snow Blower.



VIEW of switch point after accumulated snow and dirt has been blown away by the Racor Snow Blower.



ONLY ONE brick was dislodged while the station was being moved 1000 ft. and across the tracks. This was done by a contractor.

## Moved and Modernized...



IN ITS NEW location the building was cleaned and painted outside and completely renovated and redecorated on the interior.

## This Station Looks Like New

• The Delaware, Lackawanna & Western has what appears to be a new passenger station at Corning, N.Y. The structure is modern and attractive in appearance, inside and out, and is about 1000 ft. away from the location of the old station on the other side of the tracks. Actually, however, it is the same structure.

It happened this way. As part of a grade-crossing elimination project sponsored by the State of New York, the double-track main line of the Erie through Corning was removed to a location along the northerly edge of the city where for a distance it parallels the double-track main line of the Lackawanna. Plans for the project called for the construction of a new passenger station for the Erie on the site of the Lackawanna's existing station. The latter was a single-story brick structure with a gable roof and wide overhanging eaves on all sides. Although it had been in service for many years it was structurally sound for the most part. It was decided, therefore, to move it bodily to a new site on the opposite (north) side of the tracks and about 1000 ft. to the west, and then to revamp it inside and out as necessary to give it a modern appearance.

The work of moving the station was done smoothly and uneventfully by a contractor. To prepare it for the journey, holes were cut in the concrete foundation to receive transverse steel beams. These permitted the structure to be jacked up and a system of longitudinal steel beams to be inserted. These were to serve as the upper runways for a system of steel rollers. The lower runways consisted of lines of T-rails supported on timber cribbing. Not only was it necessary to move the station parallel with the tracks a distance of about 1000 ft., but also across the tracks. Finally, it had to be rotated through an angle of 180 deg. so that the agent's office would be on the track side. That all this was done without major incident is indicated by the fact that only one brick was dislodged during the trip.

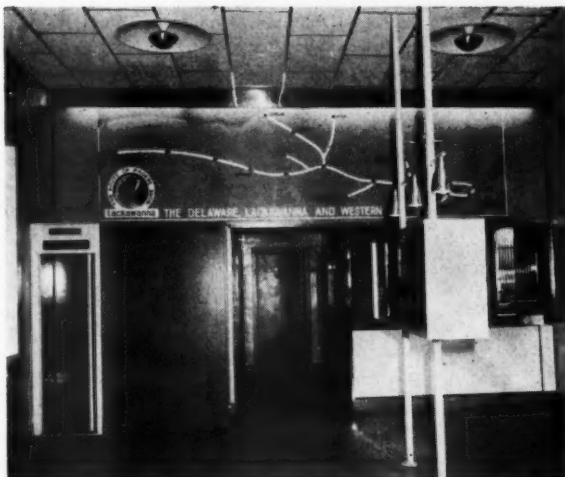
### The Modernization Work

Installed on a new foundation at its new site the station was thoroughly cleaned on the exterior and painted a light gray above the window-sill line and a darker gray below. A sidewalk was constructed around the station and a platform of ample length along the track side. It is approached from adjacent streets by wide sweeping asphalt-paved driveways, and there is ample parking space.

On the interior the station has undergone a striking transformation. The interior finish originally consisted of wood floors and wainscot, and plaster walls and ceilings. The waiting room was heated by two circular steam radiators. As remodeled, the waiting room has a terrazo floor, Fiberglas ceiling panels set on aluminum strips, and plaster walls painted a light gray except for recessed panels between the windows, which are painted a darker gray. Other features include modern toilet facilities and heating, a bank of parcel lockers behind a screen, modern lighting fixtures, new wood settees, and double glass doors on both the track and street sides.

There are several unusual features. One is a huge map of the Lackawanna painted on the wall and extending the entire width of the room above the ticket office. Another, in recognition of Corning as an outstanding glass-manufacturing center, is an exhibit of glassware contained in a case mounted on tubular steel supports at an intermediate point in the room.

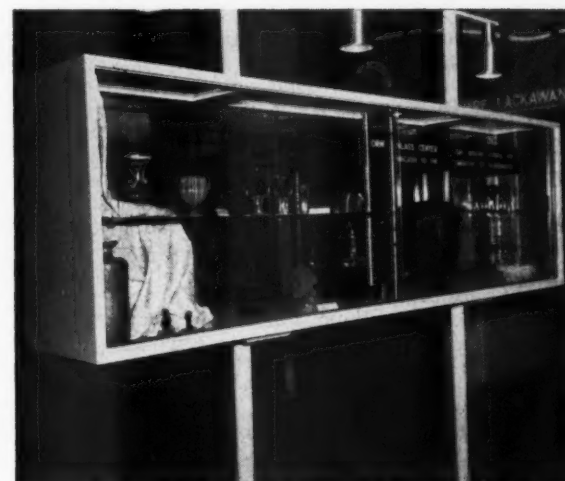
The work of moving and modernizing the Corning station was carried out under the general direction of G. A. Phillips, chief engineer of the Lackawanna.



THE WAITING ROOM is dominated by a large illuminated map of the Lackawanna painted on the wall above the ticket window.



DECORATIVE EFFECT in the waiting room is enhanced by recessed wall panels between the windows, which are painted a dark gray.



CENTER OF INTEREST is this display of glassware. Note "spot lights" overhead which illuminate exhibit through glass top.





ISOLATED electrical systems, as shown here, using portable power plants, present less of a shock hazard than commercial power systems where one leg of the circuit is grounded.

# How to Prevent Shocks From Portable Electric Tools

By Dr. Edwin L. Lotz

**Safer than many home appliances, portable electric tools nonetheless present a shock hazard when not properly maintained and operated. As with all other electrically operated devices, certain basic precautions must be taken. Dr. Lotz, in this article, points out the common causes of electric shock as may be encountered in the operation of portable electric tools and how such hazards may be avoided. He also discusses the effects which various amounts of electric current have on the human body and what, if any, methods of resuscitation can be effectively applied in various stages of electric shock.**

• During the past two decades there has been a constant increase in the use of portable electric tools in construction and maintenance work. Electric tools such as hand saws, drills, grinders, pipe threaders and hammers are today commonplace in railway maintenance of way and structures work. Consequently it is necessary that we critically examine safety practices in order to eliminate shock hazards. In many respects the hazards involved in the use of electric tools are substantially less than the hazards inherent in most electric home appliances, and very particularly those appliances used in the kitchen or bathroom. From a practical standpoint, such home electrical appliances are potentially more dangerous than electric tools on which special attention is given to details of design and construction and which are usually equipped with heavily insulated cables. It must also be noted that most electric tools designed for use on construction work are equipped with grounding connections to provide additional safety.

In the final analysis, the danger of exposure to electric shock from electric tools and appliances is directly dependent upon how well they are designed and constructed and on whether or not they are properly maintained. The greatest danger on construction jobs is not from tools themselves, since most electric tools on the market today are well designed and well constructed; the greatest danger arises from the careless use of temporary wiring and exposed switches and from connecting cables from which the insulation has been worn from abrasion or continuous flexing. Such hazards become more dangerous when men are working on the ground or in basements or grounded structures such as steel buildings, especially if much dampness is present.

## Relatively Few Injuries

The number of injuries from electric shock is very small, considering the widespread use of electricity in this country. There are no separate figures on the num-

ber of deaths from electric shock in construction and maintenance work, but the total number of deaths annually attributed to electricity is about seven per million of the population in the United States which includes utilities workers constantly exposed to high voltages.

Incidentally, there is a great deal of misunderstanding regarding the relative dangers of the two voltages most commonly used in construction work, namely 115 and 230 volts. While it is true that under identical controlled laboratory conditions the higher voltage is the more dangerous, factors such as grounding conditions, danger of exposed wires and switches are actually of more importance than the question of voltage and are frequently given relatively scant attention when safety measures are being considered.

## Isolated Systems Safer

One method for greatly reducing the danger of electric shock in construction work is to use portable generating sets to provide power for the tools. Shock hazard is lessened with such systems since in the conventional power line, one leg of the circuit is always grounded. Consequently, if a workman comes in contact with an ungrounded wire and simultaneously with a grounded object, such as a water pipe, he may be subjected to a severe shock. In the case of the portable generator, however, an isolated electric system exists in which no part of the circuit is connected to ground. Consequently, to receive a shock under such conditions, a person would have to contact two bare wires simultaneously—a relatively unlikely occurrence.

## Use Grounding Wires

As mentioned previously, practically all portable electric tools are equipped with a grounding wire, usually insulated with a green covering. Proper practice, which gives a maximum of safety, requires that this grounding



wire be used at all times. In the case of tools operated on single-phase circuits, the best way to effect the ground is to equip the tool with a three-pole connector to plug into a similar receptacle to which a grounding circuit has been connected. Where tools are operated from conventional power line outlets, the ground circuits must be connected to a water pipe or other suitable ground. Where tools are operated from portable generating sets, the shell of the tool should be connected to the shell of the generator. Some portable generators are equipped with a special grounding lug for convenience in making this connection. To maintain the advantage of the isolated system, however, it is preferable not to physically ground the shell of the generator to a water pipe or other such ground.

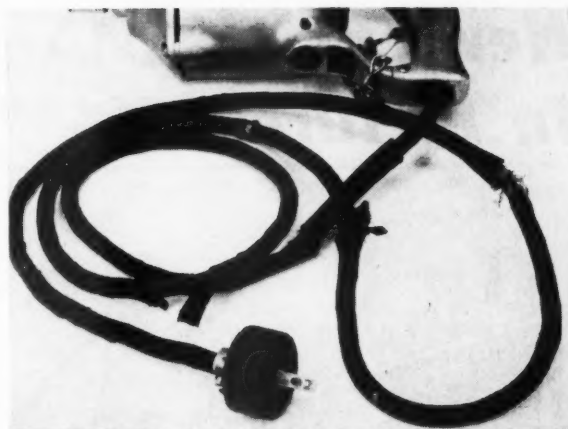
Most of the portable electric tools in use today are powered by universal motors. In the past few years, however, portable tools powered by high-frequency, or "high-cycle," motors have come into extensive use. The current most often used in such installations is 3-phase, 220 volts, 180 cycles. In such equipment the possibility of internal short circuits and grounds is minimized because of the absence of brushes, brush riggings and commutators.

### Effects of Electric Shock

By far the most dangerous effect of electric shock is that which is caused by a very small current flowing in the body in such a manner that part of it passes directly through the heart. This current tends to derange the rhythm of the heart muscles so that they no longer contract in unison, but rather beat as separate and independent muscles completely out of coordination with each other. This condition is known as "ventricular fibrillation." If this condition is allowed to continue for a period of two minutes or more, there is very little chance for recovery and death will eventually result due to the cessation of blood circulation.

### Three Current Levels

By far the most important factor to consider with regard to any low-voltage shock, such as may be encountered in the operation of portable electric tools, is the current. We find that there are three different and distinct levels of current which are of importance. The first is the "perception current," or the smallest current value which an individual can detect when in contact with an electric circuit. Secondly, we have the so-called "let-go current"—the maximum amount of current which an individual can stand, without harmful effect, and still release himself from the circuit. The third is that known as the "freezing current," or that value of current which



**WORN CORDS**, frayed through abrasion and continued flexing, present a serious shock hazard and should be replaced.

renders an individual helpless to release himself from the circuit of his own volition. This latter current level is by far the most serious for, under such conditions, there is a heating process at the surface of the skin which causes blistering. In such cases the skin resistance is appreciably lowered by the moisture formed in the blistering process allowing the current flowing through the heart to increase until such a value is reached that ventricular fibrillation occurs.

### Effects of Voltage and Frequency

Studies made on the effects of electric shock have shown that approximately five times as much direct current is needed to cause fibrillation as alternating current. With regard to alternating current, it has been found, also, that the muscles of the heart are able to follow each cycle of current at frequencies between zero and 25 cycles. The current required to cause fibrillation in this frequency range is therefore more than that required in the range between 40 and 80 cycles where the heart is most readily thrown into fibrillation. Above 80 cycles the current required to cause fibrillation gradually increases with frequency so that, for example, twice as much current is required to cause fibrillation at 180 cycles as at 60 cycles.

It is almost universally accepted by everyone that high-voltage circuits are dangerous. However, since the value of current flowing through a person is the most important factor in the intensity of the shock, it is well to remember that low-voltage circuits under certain conditions can be extremely dangerous. Under like conditions of resistance, the higher the voltage the higher the current which will flow through a given circuit. On the other hand, it is also true that the higher the voltage, the more apt one is to be thrown clear of the circuit due to the violent muscular reaction resulting from such a contact.

### Recovery from Electric Shock

The most effective method for recovery from electric shock is that of artificial respiration. In the case of high-voltage shocks of short duration, the application of artificial respiration will, in most cases, save the injured person. In the case of a low-voltage shock, which does not involve ventricular fibrillation, artificial respiration has also proven to be a quite successful means of resuscitation.

### About the Author

Dr. Lotz is an authority on the subject of the effects of electric shock. The first to accurately measure the currents necessary to impair heart action, he was instrumental in the development of shock treatment equipment widely used by hospitals today. Following research into the effects of shock as related to electrical frequency, Dr. Lotz became engaged in studies dealing with the manufacture and development of electrical equipment. He is at present research director of the Irvington Varnish & Insulator Co.—Editor

## News Briefs in Pictures...



**ABOVE**—The first power shovel ever to be built in Chattanooga, Tenn., and the first Koehring shovel to be produced in the South, rolled off the production line recently at the new Chattanooga plant of the Koehring Southern Company. Housed in an 800-ft. by 120-ft building, the plant is operated by a subsidiary of the Koehring Company, Milwaukee, Wis.



**ABOVE**—East Yard, Grand Junction, Colo., when opened early this month, became the first retarder-classification yard on the Denver & Rio Grande Western. Designed to eliminate most of the delay caused by the flat switching which was previously required at terminal yards, the new yard will block trains for all connections. Located at a through point, the yard will start classifying a train as soon as it arrives and permit it to leave, reblocked, in as little as 1 hr. and 15 min. By so doing, the yard will be empty most of the time.



**RIGHT**—The Caterpillar D8 tractor shown here, equipped with a No. 8A bulldozer, is used to spot gondola cars under a rock loader operated by the George W. Kerford Quarry Company near Amazonia, Mo.



# WHAT'S THE ANSWER?...

... a forum on track, bridge, building and water service problems

## Inspecting Old Creosoted Piling in Trestles

What methods can be used to inspect old creosoted piling in trestles to determine the extent and location of possible defects? Which of these give the best results? Explain.

### Use Increment Borer

By F. H. CRAMER

Bridge Engineer, Chicago, Burlington  
& Quincy, Chicago

Inspection of creosoted piles in trestles starts with a visual surface scrutiny. Next use a light hammer to test each pile for soundness and hollow rot. By the sound of the pile it can be easily detected if the pile is hollow from rot. The sound also gives a fair idea of the thickness of the good timber left. Finally the hammer test defines quite closely the spots where the third, and conclusive tests should be made by using an increment borer. The increment borer will give a general idea as to how much timber is still left in the pile. The amount of timber left depends entirely on the character and the penetration of the treatment. Today we are treating pine piles with 14 lb. per cubic foot and the penetration is almost 100 per cent.

Careful inspections should be made where the sway braces are fastened to the piles. This may not be so important now as formerly because of the widespread use of grids. The new grids now in use allow some air space between the sway brace and piles which, in my opinion, will prevent decay to a great extent.

### Damage Usually Concealed

By W. D. KEENEY

Engineer, Service Bureau, American  
Wood-Preservers' Association, Chicago

Any thorough inspection of old creosoted piles in place usually involves boring of the piles to determine the condition of the heart or interior wood, which can not be detected from the surface. The

surface of a pile creosoted in conformity with American Railway Engineering Association's specifications, with the usually stipulated retention of preservative per cubic foot will remain sound for a great many years. Decay, if present, is likely to be in the interior where poorly protected cutoffs or depleted field treatments have exposed untreated wood and permitted the entrance of moisture. Decay may also gain entrance at bolt holes that have not been swabbed with creosote. Once started at these points, decay may progress for some distance into the interior if moisture accumulates.

A thorough surface inspection

should be made first, particularly at points of contact with the caps, at brace connections, and at the ground line. Sounding with a light hammer or knob end of a bar will disclose places where it is necessary to bore the pile in order to examine the interior condition. If a hollow or dead sound results, the pile should be bored in order to determine exactly the extent of deterioration. Evidences of structural failures in early stages, too, should be carefully scrutinized, as they may result from decay at some critical point. Such failures, of course, may be sufficiently pronounced to warrant rejection of the pile without further examination.

An "increment borer" should be used, as it extracts an undisturbed core that shows definitely the interior condition and can be readily examined. Holes should be slanted sufficiently to permit ready drainage of water that may have col-

Answers to the following questions are solicited from readers. They should be addressed to the *What's the Answer* editor, Railway Track and Structures, 79 W. Monroe St., Chicago 3, and reach him at least five (5) weeks in advance of the publication date (the first of the month) of the issue in which they are to appear. An honorarium will be given for each published answer on the basis of its substance and length. Answers will appear with or without the name and title of the author, as may be requested. The editor will also welcome any questions which you may wish to have discussed.

### To Be Answered In the September Issue

1. To what extent, under particular conditions, have the number and positioning of rail anchors been changed in recent years to provide better anchorage? What have been the results? Explain.

2. What causes cold-weather roof leaks? In what types of roofs do they occur? How can they be prevented? Explain.

3. What methods can be used to break up the damming effect of dirty shoulder ballast in stone and gravel-ballasted track, where cleaning and disposing of the fouled ballast may not be desirable or feasible? How effective are

these methods and how often should they be used? Explain.

4. What precautions should be observed to minimize the hazards of fire occurring from the use of oxyacetylene-cutting torches in the repair of steel bridges? Explain.

5. What are the relative advantages and disadvantages of detergent oil and straight mineral oil when mixed with gasoline to lubricate two-cycle engines employed on roadway machines? What effects, if any, does each of these types of oils have on the fouling of spark-plug points? Explain.

6. When a wood water tank starts to leak badly around the chime, how can effective repairs best be made? Explain.



lected in them, and unless the pile is to be removed immediately the hole should be filled with a creosoted plug. These, of the proper size to fit the increment boring,

can be obtained at any treating plant.

Just what decayed area should be permitted before the pile is condemned must be judged for each

particular structure. A small amount at the core reduces the bearing area very little and does not seriously affect the strength of a pile as a column.

## Do What with Chemically Killed Brush?

What, if anything, should be done with brush on the right of way after it has been killed by chemicals? Why? If disposal is considered necessary how can this best be accomplished?

### Must Be Removed

By B. S. CONVERSE\*

Division Engineer, Denver & Rio Grande Western, Grand Junction, Co'o.

Brush and other woody growth on the right of way which has been killed by chemical spraying should be removed or otherwise disposed of for the same reasons that prompted the original spray operation plus several others which affect subsequent sprayings. Dead brush should be disposed of: (1) To eliminate possible grounding of communication and signal lines by a transfer of current along wet stalks or branches; (2) to prevent interference with the vision of en-

\*Until May 1, 1953, Mr. Converse was division engineer on the Chicago & North Western at Sioux City, Iowa.

ginemen, motor-car operators, and men working on the track, particularly on curves; (3) to eliminate the hazard of accidental fire; (4) to provide side clearance; (5) to prevent blocking of side-ditch drainage; (6) to permit more effective subsequent spray operations on sprouts and regrowth; and (7) to permit the rapid growth of desirable grasses.

The method of removal or disposition of the dead growth depends on the type of terrain, the size of plants, the size of the infested area, the availability of labor, and many other factors of a local nature. The cutting of brush by hand during winter months has been found desirable and economical in the north where winters are severe enough to

prevent track maintenance operations. Also, under certain local conditions, hand cutting is the only practicable method. During proper weather conditions the area covered by dead brush may be burned over with fire. Also, large areas of brush have been economically cleared through the use of bulldozers or other grading equipment during the off season.

### It Just Deteriorates

By L. A. LOGGINS

Chief Engineer, Southern Pacific Lines in Texas and Louisiana, Houston, Tex.

Basically, we do nothing relative to disposing of the brush on our right of way after it has been killed by chemicals.\*\* It is left in place and deteriorates without the necessity of removing it.

\*\*A complete description of the methods and results obtained by the T.&N.O. in spraying chemicals on its right of way was published on pages 59 to 61, inclusive, of the January issue of *Railway Track and Structures*.

## Platform Decks in Diesel Repair Shops

What are the relative merits of concrete and wood for use in the decks of working platforms in diesel repair and servicing buildings? Explain.

### Make Decks of Concrete

By W. S. WICKER

Chief Engineer, Transportation Mutual Insurance Company, Philadelphia, Pa.

In many diesel repair shops, particularly where steam facilities have been converted to the servicing and repair of diesel locomotives, wood-deck working platforms have been provided. This has led to the provision of wood platforms in the new shop buildings erected solely for servicing and repairing diesel locomotives. A large number of railroads, however, have provided concrete-slab, low-level working platforms and roof-level platforms of either concrete or steel plate construction.

The proponents of wood plat-

forms in such buildings claim: (1) that they are more economical; (2) that there is less danger of damaging diesel parts if they are dropped on the platform; and (3) that there is less danger of accidents due to slipping.

On the other hand, proponents of concrete platforms claim that cleaning is easier, that the fire hazard of oil-soaked platforms is eliminated, that the damage to diesel parts dropped on platforms is nominal, and that accidents due to slipping can be avoided by providing a proper surfacing and by the use of approved non-skid materials.

The wood platforms soon become soaked with oil and grease materially increasing the fire hazard in diesel-servicing buildings. When they are soaked with oil and

grease, the platforms cannot be thoroughly cleaned except by the use of steam or hot water and a cleaning solvent. When the difficulties of cleaning and the possibility of having a serious fire damage or a total loss are taken into consideration the ultimate economy of wood platforms becomes questionable.

One frame enginehouse which had been converted to a diesel-servicing building became so saturated with oil that it was eventually torn down because of the fire hazard and the seriousness of exposing diesel locomotives to that hazard.

Approved non-skid materials tend to absorb oil and prevent saturation of concrete. They may also be used on wood platforms but will not prevent eventual saturation with oil.

The electrical installations under diesel-servicing platforms, particularly where wood platforms are provided for reasons of economy, are frequently not of a type suitable for such locations, for flammable vapors as well as moisture are



present. The wiring below the platform level should conform to the requirements of the "National Electrical Code for Hazardous Locations," Class I, Division 2, as modified for garages. Without such installations a through steam cleaning or washing of both wood and concrete platforms with hot water and solvent is not practicable, because of possible damage to

existing electrical equipment.

Platforms in some of the newer diesel-servicing buildings consist of concrete slabs supported on steel beams and columns with added features of a 4-in. raised curb extending along the edges of each platform. This modern construction is fire-safe and lends itself readily to proper cleaning.

Considering these factors I

would say that concrete-slab platforms supported on steel beams and columns should always be used for diesel-servicing and repair shops, and that the spaces beneath the low-level platforms, which are about 4½ ft. to 5 ft. above main floor level of the building, should be treated as "Hazardous Locations, Class I, Division 2, and modified for garages."

## How to Clean Oil-Storage Tanks

What is the best method of cleaning oil-storage tanks prior to dismantling them for re-erection? Explain.

### Be Careful of Explosive Gas

By KEN WEIR  
Vice-President, W-M Corporation,  
Chicago

The primary objectives in moving a tank from one location to another are economy and convenience in the new location. Moving an oil tank, and particularly one that must be dismantled or cut into sections, presents hazardous problems which are not present when steel water tanks are moved. Railroads, unlike oil companies, seldom relocate oil storage tanks and for this reason the proper precautions necessary to avoid explosions and fire during dismantling operations should be carefully investigated prior to doing any work.

For many years, one of the most widely accepted methods of preparing an oil tank for dismantling was to "steam" it out, with the thought that this process would eliminate the explosive gases and clean the tank-shell plates. However, after what was considered a good steaming job, several tanks exploded with disastrous results at the start of dismantling, which led to further investigation of safer methods of preparation. These investigations found that tanks of a size to require cutting down for moving, could seldom be filled with sufficient steam to do the job that was expected because of the inadequate supply of steam. On the other hand, adequate ventilation has proved to be a simple and relatively inexpensive method of cleaning an oil tank, particularly one which has been used for storing the lighter oils.

In this method it is suggested that forced ventilation be used, by placing an exhaust fan over the

roof manhole, then removing the shell manhole covers and pulling air through the tank for an extended period. This literally forces the explosive gases out of the roof manhole and gradually fills the tank with air. Tests can be made frequently to determine the explosive character of the gas and air remaining in the tank by using a common explosion gas meter. These tests can be started by inserting the test equipment through one of the shell manholes. No one should be permitted to enter the tank until the tests indicate the gases are safe for this purpose, and no work started in dismantling until it is determined that the explosion hazard is entirely eliminated.

If time is not important, self ventilating by leaving all manholes open, may sometimes accomplish the same results, but in every case the explosion gas meter should be used for testing.

The American Petroleum Institute has studied this problem extensively, and has prepared a number of pamphlets on the history of explosions and proper methods to follow. It would be desirable to study these before determining the method of procedure to use.

### No Single Method Best

By G. A. HOPE  
Socony-Vacuum Oil Company, Inc.,  
New York

There is no one best recommended procedure to clean oil-storage tanks. The size of the tank in question, the nature of the product which has been stored in it, and the on-the-spot facilities must all be taken into account.

There are certain publications useful to anyone who wishes to get a good over-all picture of what is involved in cleaning oil-storage tanks. We can mention the bulletins put out by the American Petroleum Institute, and also those by the U. S. Navy, Bureau of Ships. The diesel locomotive, of course, has brought to railroad personnel new problems of fuel and lubricating oil-storage and its handling. With further experience it should be possible to define cleaning procedures where railroad applications are involved in much simpler terms than is possible at this time.

### Chemicals Give Good Results

By S. J. MARTINEZ  
Technical Director,  
Dowell Incorporated, Tulsa, Okla.

Sand blasting has long been the established method of cleaning oil storage tanks. Recent experience, however, indicates that chemical cleaning will produce improved results at no additional cost. A recent case history will illustrate this.

An eastern distillery purchased three oil-storage tanks in the middle west to be delivered some 800 miles away. These tanks were 29 ft. high by 45 ft. in diameter, with a central column supporting the roof. They had been used for fuel oil storage.

It was necessary to remove all traces of oil from the insides of these tanks before dismantling. This was important, not only from the standpoint of convenience for shipping, but because the tanks were to be used for alcohol storage. Any traces of oil or grease that might remain on the inner surfaces of the tank would, of course, discolor the alcohol.

Sand blasting was attempted but proved to be unsatisfactory. It was not only time consuming, but it was found that this method did not

remove the grease and oil trapped on the over-lapping edges of the plates.

Chemical cleaning was next tried to solve this problem. Using mobile, high-pressure pumping equipment, and specially formulated solvents, a chemical service company

quickly removed all traces of oil and grease from the tanks. Lances equipped with specially designed jets were utilized in reaching all areas inaccessible to sand blasting and each tank was cleaned in about 9 hours time. Inspection of the tanks following the cleaning

operation showed them to be completely free of all oil and grease, and safe for storing alcohol. Cost of the chemical cleaning operation was no greater than the sand blasting operation would have been, based on total square feet of surface cleaned.

## Improvements Needed in Track Tools

What improvements, if any, are needed in track tools to make them safer to use or more serviceable? Explain.

### Progress Being Made

By TROY WEST

Engineer of Track, Union Railroad,  
East Pittsburgh, Pa.

The best way to explore the ramifications of this subject would be to get the composite requirements in the opinion of all supervisors and trackmen as to the safety, adaptability and design of track tools and then go to the manufacturers and work the problems out with them. Above all it must be known whether or not the improved tools could be produced for a reasonable cost. There is no doubt in my mind about improvements being necessary. I also believe that some improvements are being made and will be made in tools to make them more serviceable and safer to use. Trackmen, in general, are better educated now than they were in the early days of railroading and, because of that, they ask questions. The desire of these men for improved tools often forces the issue to a satisfactory conclusion.

Progress in the development of mechanical equipment for use in track maintenance has reduced the use of some track tools. Mechanized tie-tamping units have altered the use of the tamping pick. Mechanical spike pullers have also replaced the claw bar in out-of-face rail-renewal jobs. Regardless of such developments, the basic track tools that have been used for decades are still required and, in my opinion, will be in use for some time to come. It is the responsibility of those in charge of track maintenance forces to do what they can to see to it that present day requirements of safety and adaptability in track tools are met. The benefits of improved tools which are offered should be fully understood, and where trouble or

the need for correction is recognized, a step further should be taken by the person, and through the channels of *Railway Track and Structures*, or by other means, the need should be voiced and worked out to prove or disprove the merit of the idea. To understand some of the results which have been realized by this method in improving the design of track tools, it is worth while to review one or two examples.

The single-acting track jack has become the standard on about 90 per cent of American railroads because of its many advantages over the double-acting jack. A man with a 64-in. lever can raise about twice as much with a single-acting jack as he can with a double-acting jack, because of a shorter fulcrum. A single-acting jack has the holding pawl in the base and the lifting pawl is in the socket lever, while the double-acting jack has both the holding and lifting pawls in the socket lever. With the single-acting jack the effort is only placed on the down stroke of the operating lever, while on the double-acting, the trackman has to lift the load with the up stroke of the lever. This requires much more effort. The single-acting jack provides for a sudden release of load and there is less danger of its being caught in the track by trains. It is a safer and easier tool to handle and the trackmen realize this and appreciate this improvement.

The track chisel has recently been redesigned to make it a safer and more serviceable tool. The angle of the cutting edge has been changed from 55 deg. to 65 deg. and the radius has been changed from 1 in. to 1½ in. This change was made through close cooperation between the manufacturer, foremen and trackmen and by field tests. Experience has proved that

the new tool is safer because it is now possible to make the tool tougher so the cutting edge will chip and break less than before.

The claw bar has been redesigned within the last six years to make it a safer and more serviceable tool. The contour of the heel of the bar was changed to effect enough rise of the claw to pull a spike straight up without the need of added heel support. A large radius in the heel from the claw to the handle end made this possible. Now the full release of the spike is made when the handle is about six inches above the opposite rail. A hand stop is provided on the handle about 10 in. from the nipping end to prevent hand injury on the opposite rail as the handle is lowered. This new tool is safer to use and one man can now pull a spike with it whereas two men usually worked with the old bar.

A spike starter is now being considered for marketing which will meet a necessity not provided for in the new claw bar. This tool, made of either carbon or alloy steel, has a symmetrically tapered claw to engage the head of the spike and a striking head with a wooden handle sloped right or left. Experience has proved its value in making the initial lifts on spikes around switch plates, guard rails and frogs and in hard woods where the spikes are down. Use of the spike lifter will now provide a safe way of removing spikes which were once improperly done by striking the heel of the claw bar.

The use of aluminum alloy in making track tools has been proven to be successful. Track jacks made with aluminum jackets have been reduced about 30 per cent in weight without loss of strength. Tie and timber tongs have also been successfully reduced in weight by the use of alloys. Lining bars of aluminum are being tested. When a track gang is out-fitted with the best tools that the trackmen consider adaptable and safe to work with, the tools will be more serviceable.

The grade of steel used in mak-

ing track tools has much to do with the safe limit of wear and must be the determining factor in how they are reclaimed. Tools made of carbon steel can safely be reclaimed in most all company shops by heating methods if worn only within reasonable limits. However, it is very important that proper control is exercised in reclaiming tools by this method if they are made of alloy steel. Otherwise, a reclaimed tool can be made into an unsafe instrument of use. Track chisels, double-faced sledges and spike mauls are examples of important striking tools which are made of carbon and alloy steels. It is obvious that the question of reclaiming such tools should have the solemn consideration of the supervisors.

Trackmen must be instructed in the handling and care of track tools which have been supplied them. This instruction should include a clear explanation of their safe use and the reasons affecting the design if best service is to be obtained from track tools. Only when a trackman has been supplied with the proper tools in good condition can it be considered a careless act of his, for instance, to turn a rail by the use of a lining bar.

### Light Alloys Have Great Use

By GEORGE S. CRITES

Division Engineer (Retired),  
Baltimore & Ohio, Baltimore, Md.

Regardless of all the developments and improvements being made in power equipment of all kinds, hand tools will always be essential. Let's review a few hand tools and see if we can't think of ways to improve them.

Shovels and ballast forks are made of steel with hickory handles of varying designs riveted to the blades or tines of the tools themselves. They have many kinds of hand holds riveted or otherwise fastened to the upper end. When weathered, the hickory wood gets rough and may check. Rivets or other fastenings may get loose and the hand holds may become so loose they might pinch a blister on the user's hand.

Metallurgy has surely reached a point at which a light, smooth, non-weathering one-piece shovel or ballast fork (including the handle) can be manufactured with wear-resisting blades and tines and with the rest of the tool composed of

aluminum, magnesium, titanium, or other strong and light alloys. The present designs of track shovels and ballast forks makes such tools back-tiring and back-straining instruments. Up-to-date shovels and forks should be designed for less back bending.

Vast improvements have been made in the design, weight and workability of track jacks within the past few years, but light-weight alloys broaden the field for further simplification and sturdiness. Lifting power should be such as to allow short, light-weight jack handles to be used and the handle sockets should be so made that lining bars or claw bars cannot be used for jack handles. There is a demand for a light-weight, sturdy jack with the handle attachments working parallel with the rail for work in tunnels and on bridges.

Present designs of claw bars, lining bars and tamping bars corrode and the handles get rough. Their weight and size are entirely too great. Here again, metallurgy allows for a design that is light, sturdy, non-corroding, and safe.

Tamping and clay picks are too heavy and their handles made of hickory or other wood just do not fit into modern-day practices. The main body of these tools should be of light-weight, strong alloys with the working ends of wear-resisting steel alloy. The handles should also

be of light-weight non-corroding alloys.

Track gages and levels should be of wood and all metal ones should be discarded. Special means must be provided to carry these important tools to and from work and they should never be carelessly handled or piled in with other tools.

### Opportunities Are Great

By J. C. BRENNAN

Division Engineer, Delaware & Hudson,  
Oneonta, N.Y.

The service life of track tools is of prime importance in these days of high labor and material costs. Mechanization has, in part, reduced somewhat the volume of track tools needed by our track forces, but nevertheless the trackman will always require the hand tools he has had to use in the past. For this reason, there should be no letdown in our constant search for improvements.

Inasmuch as the design of a great many of our hand tools based on such fundamental principles as the lever and the screw, little can be done in the way of improving them. The most fertile field lies in increasing the service life of the tools. With this in mind, the railroad tool suppliers and



Reprinted by special permission of The Saturday Evening Post.  
Copyright 1953 by The Curtis Publishing Company.



Committee 5 of the American Railway Engineering Association have been cooperating in an effort to find methods of strengthening the weaker points in our tools and of making tools of better and more lasting materials. Alloy steels are being used in the tools in an effort to determine whether or not serv-

ice life of them can be increased.

Generally speaking, an increase in service life goes hand in hand with safety in its use. The tool which has a short service life is the most dangerous to use. Many trackmen are prone to pay little attention to the condition of the tool and therefore often invite an acci-

dent to themselves or to their fellow workers. The use of aluminum in track jacks is but one example of how the trackman's work can be more safely and efficiently performed by improvements in track tools. Surely, there are many more such improvements that can and must be made.

## Oxyacetylene Method of Cropping Rail

Where the oxyacetylene method is used for the shop cropping of rail, what procedures and measures will give the best results? Explain.

### Use Good Cropping Device

By R. L. REX

Superintendent of Railroad Service,  
Air Reduction Sales Company, New York

Because of its cross section, a railroad rail is generally considered difficult to cut smoothly and efficiently by means of an oxyacetylene flame. In fact, many improvised devices have proved unsatisfactory for this exacting job. Our Rail Cropping Machine, we believe, provides the solution. The machine is provided with a three point contact which automatically positions it for making a square cut when placed on the rail.

All sections of rail now in use on railroads can be cut with this machine. Two torches are furnished, one on top, which can be easily adjusted in relation to the ball of the rail so as to cut through the ball and a portion of the web, and one at the bottom rigidly supported in the inverted position and at the proper height for cutting the base from below and at the same time severing the uncut portion of the web. A metal cap protects the idle tip when the opposing tip is in use. Both torches are mounted on a carriage which is moved by a hand screw. The speed of operation is controlled by the operator in accordance with the weight of the rail being cut. When making repeated cuts on the same size of rail, it is not necessary to make any readjustments in going from one location to the next.

The machine is provided with a three-point contact which automatically positions it for a square cut. After being placed on the rail, the machine is held rigid by the hand screw which bears against the ball of the rail opposite the base support.

Two cuts are required to crop a rail. The first cut is made across the ball of the rail and half way down across the bottom of the base of the rail and up through the web to the web. The second cut is made in such a manner that it will meet the first cut.

To do this according to a technique chosen for the best results, the operations follow in order. First insert a cutting tip of the proper size in each torch and cover the lower tip with the tip cap. By means of the locating holes in the frame of the machine adjust the upper torch so that the tip end is at the proper distance (about  $\frac{3}{16}$  in. above the ball of the rail. The lower torch is already fixed at the proper height relative to the base of the rail.

Turn the lead screw handle until the upper tip is slightly outside the edge of the ball of the rail. Adjust the oxygen pressure to 55-60 p.s.i., depending on the size of the rail. Adjust the acetylene pressure to about  $3\frac{1}{2}$  or  $4\frac{1}{2}$  p.s.i., then light the tip, observing the usual cutting-torch practice.

Turn the lead screw handle until the flame of the upper tip reaches the edge of the ball, pause just long enough to insure that the metal has been raised to the ignition point, then turn on the cutting oxygen and immediately continue the travel of the cutting machine directly across the ball of the rail.

When the first cut has been completed, shut off the upper torch, fasten the tip cap on the upper tip and light the lower tip. Then proceed to make the second cut, in the reverse direction, across the bottom of the rail base, severing the rail.

The web of the rail is then

ground to remove any irregularity at the junction of the two cuts by making a few passes up and down the web with a portable grinder. At the same time a bevel is ground on the ball of the rail.

When the cut is started, a uniform speed should be maintained throughout the cut. If this procedure is followed closely the finest results will be obtained.

### Cuts Must Be Smooth

By T. M. VON SPRECKEN

Assistant to Chief Engineer,  
Southern, Washington, D. C.

Shop cropping of rail by the oxyacetylene method is satisfactory only when the machine control of the flame is maintained to a high standard so that the cuts are reasonably smooth. The smoother the cut, the better the results will be. The feed screws and other parts of the cutting units must be cleaned and checked at frequent intervals and adjustments or renewal of parts made so that close tolerances are maintained. Any looseness results in rough cuts.

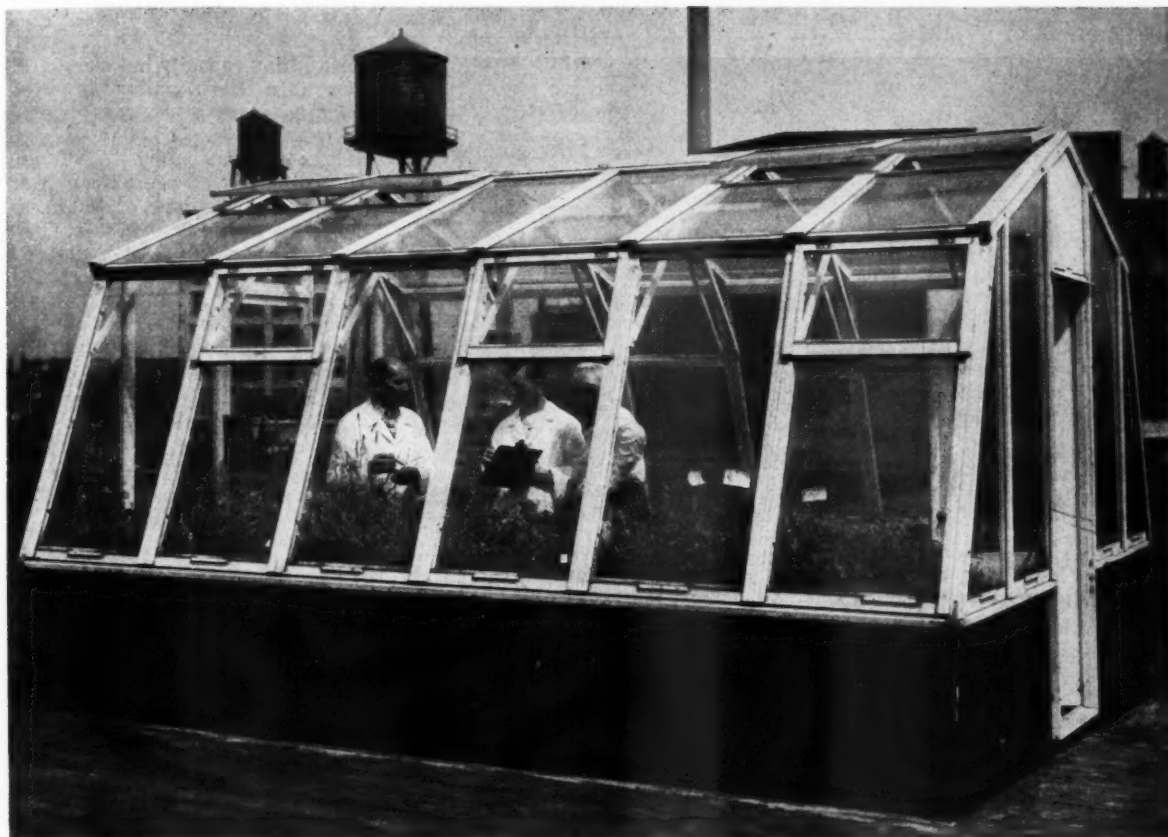
The heat and quick draw obtained in this process produces a martensitic structure in the surface of the metal. This structure is very hard but brittle and tends to produce conditions which may favor the formation of web cracks starting from the rail ends. For this reason the martensite metal should be removed by grinding or other means. It is usually about 0.015 in. to 1.020 in. deep. As in all cropping operations by any method, the edges of the cut should be chamfered by grinding to remove burrs and any irregularities.

With close control, this method has been found satisfactory for cropping relatively light rail to be used on secondary lines. We have no experience with this method for cropping the heavier sections of rail or for using rail cropped by this method under heavy traffic.

# THESE MEN . . .



## ARE WORKING ON YOUR WEED CONTROL PROGRAM



With the completion of our new automatic temperature-controlled greenhouse, small scale tests on weed control problems can now be studied every month of the year. Skilled chemists work on formulation.

An agronomist takes over—his specialty is the habits of plant life—what makes it grow, and what makes it die. His task is to evaluate the killing properties of the new type or newly formulated chemical. To observe if it kills, or merely blights. If it fails to kill, what can be done to make the product more effective.

READE PRODUCTS, and competitive products are studied with equal care. New raw materials are evaluated. Evaluation is based first on effectiveness, pound for pound, or gallon for gallon.

BUT, the dollar plays a big part in evaluating. If one type of product delivers a good kill at \$50.00 per mile over a given width, and another shows a better kill but at a cost of \$150.00 per mile, there then remains the question—IS THE GREATER BENEFIT WORTH 200% ADDED COST?

YOUR WEED AND BRUSH CONTROL PROBLEM is one for the study of men trained in this highly specialized field. THE READE COMPANY has the talent and the long years of experience to justify you in consulting us.

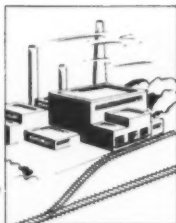
MAY WE REVIEW THE SUBJECT WITH YOU?—  
NO OBLIGATION OF COURSE.

## READE MANUFACTURING COMPANY, INC.

JERSEY CITY 2, N. J.

WESTERN OFFICE: CHICAGO 28, ILL.

WORKS: JERSEY CITY ● CHICAGO ● KANSAS CITY ● MINNEAPOLIS ● BIRMINGHAM ● STOCKTON



## PRODUCTS OF MANUFACTURERS . . .

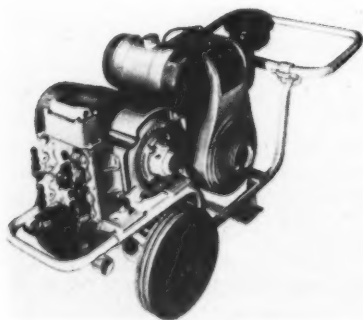
. . . new, improved equipment, materials, devices



### EARTH AUGER

THE MALL Tool Company, Chicago, has recently announced the availability of the Mall Model 2MG Earth Auger. The device, powered by a 5-hp. air-cooled gasoline engine, is equipped with a one-hand finger throttle, safety stop button and automatic clutch. Available in 6, 9 and 12-in. diameters, the auger can be equipped with an extension for boring holes

up to 6 ft. in depth. The cutting blade of the auger is of hardened steel. The pilot auger is Stellite tipped to withstand abrasion. Other features of the new auger include: Special drive shaft, said to eliminate side sway and vibration; gears turning in liquid grease, which are said to be 95 per cent efficient; and long-wearing ball and needle shaft bearings. The 2MG engine is interchangeable with other Mall attachments.



### PORTABLE POWER PLANT

THE ELECTRIC Tamper & Equipment Co., Ludington, Mich., has developed a new and more powerful portable power plant designed to take the place of the firm's Model M-20 power plant for operating up to four Jackson tie tampers. The new model, desig-

nated M-22, is driven by an air-cooled gasoline engine which has more horsepower than the engine used in the M-20. The manufacturer claims that the increased power output of the engine permits a greater utilization of the capacity of the generator. This is said to allow tampers to be operated several hundred times a minute faster than was previously possible, resulting in increased tamper efficiency. The Model M-22, like its predecessor, can also be used for lighting and the operation of other electric tools.

### TRUCK CRANE

THE UNIT Crane & Shovel Corp., Milwaukee, Wis., has recently announced the Model 1014 truck crane. The new machine, which

has a lifting capacity in excess of 12 tons at a 10-ft. radius, is rated as a 1/2-yd. excavator and, when equipped with a 30-ft. boom, weighs approximately 37,550 lb. The crane has an overall width of 8 ft. and a wheelbase of 160 in. to the center of the tandem axle. One-piece gear case, full-vision cab and air assist steering are included among the features of the machine which incorporates straight-line drive from the truck engine to the



tandem rear axles. The Model 1014 has five speeds forward and two in reverse and, when equipped with an auxiliary transmission, can provide 10 forward speeds and two reverse. Standard power installations for the Model 1014 include a six-cylinder International Harvester gasoline engine in the chassis and either a six-cylinder Chrysler gasoline engine with fluid torque drive or a two-cylinder diesel engine for the upper machinery.

### MANUALLY-OPERATED TIE DOWELLING MACHINE

A MACHINE designed for selective doweling of ties has recently been developed by the Graham Tie Dowel Service Company, (Continued on page 576)



# Look at the many advantages multi-purpose Macbeth Spike Anchors have over other types of rail fasteners!

## REDUCES MECHANICAL WEAR:

4 Macbeth Spike Anchors clamp rails, tie and tie plates solidly together with a force of approximately 4½ tons. No hold down spikes or conventional wear-resistant devices required because *the tie plates can't shift*. Mechanical wear is reduced because there is no relative motion between the tie and tie plates.

## REPLACES CONVENTIONAL SPIKE AND ANCHOR:

Macbeth Spike Anchors drive into the ties through the line spike holes of standard tie plates. *Every Macbeth* is immediately effective when fitted and *stays* that way. They hold the rail with a grip far exceeding the resistance of the ballast...and stop creep *both ways*.

## NO MAINTENANCE:

Macbeth Spike Anchors when properly driven require no maintenance...because *they won't work loose*.

## REDUCES IMMEDIATE AND LONG-RANGE COSTS:

4 Macbeth Spike Anchors per tie do the job of line spikes, hold downs and at least 2 conventional anchors (4 when 2-way holding is needed)...and you don't need wear-resistant devices. Macbeths cut maintenance...and since they reduce wear, your tie renewal costs come down, too.

for facts, figures and comparative costs, write for Bulletin C.



**H. T. KENNEDY COMPANY, INC.** • 37 WALL STREET • NEW YORK 5, N. Y.

# Construction & Maintenance

Costs Are Less



Rapid compacting of large concrete mass

One man operation speeds driving of spikes

with **SYNTRON**



## PORTABLE POWER TOOLS

Easily Portable, Heavy Duty Tools That Speed Work  
—Reduce Job Time—Cut Costs.

### Mass and Form CONCRETE VIBRATORS



Gasoline or Electric Motor Driven Types



Models for light or heavy form work

Time savers on countless construction and maintenance jobs—Syntron Concrete Vibrators assure speedy compacting and settling of concrete in forms or on large mass projects. Wall form models clamp directly against the form. Portable models for mass vibration have flexible shafts.

### Gasoline Hammer ROCK DRILLS, SPIKE DRIVERS and PAVING BREAKERS

Completely self-contained units that deliver over 2000 powerful blows per minute. Self-rotating bit of Rock Drill models speeds drilling. Spike Driver has special nose piece and centering tool for increased driving accuracy. Paving Breakers provide economical cutting of asphalt—digging clay, shale and frozen ground—tamping backfill.



Model RD51

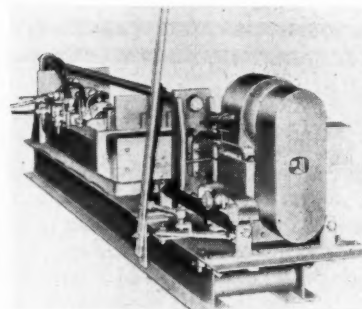
Write today for complete illustrated tool catalogue—free

**SYNTRON COMPANY**

290 Lexington Ave.

Homer City, Penna.

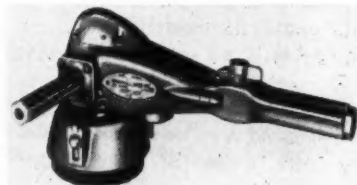
Columbus, Ohio. Designated as Model DMMH, the manually-operated machine is intended to supplement the manufacturer's Model DMAH automatic machine which was designed to accommodate volume doweling operations. The new machine is said to have the capacity for doweling both ends of two ties per minute dependent upon speed of handling. Ties are doweled by the Model



DMMH in the following manually-controlled operations: The tie is placed in the machine and held in position by a vise. Two sets of drills then bore holes in one end of the tie into which Graham "Giant Grip" dowels are inserted by a dowel pushing mechanism. The tie is then released from the vise and moved into position for repeating the operation on the other end. The Model DMMH operates from a power source supplying either 220 or 440 volts. Total weight of the machine, including hydraulic tank and pump, is approximately 2,500 lb.

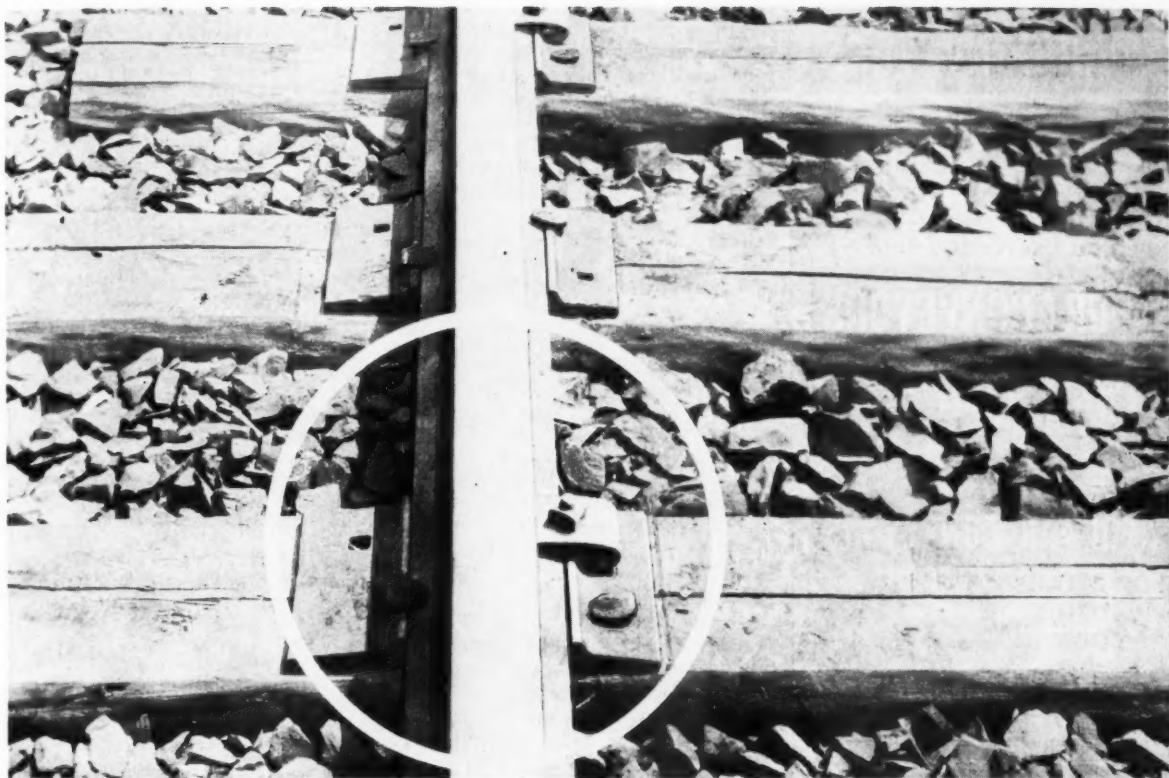
### GEARLESS ANGLE GRINDER

INGERSOLL-RAND Company, New York, has introduced a new air-powered, direct-drive gearless angle grinder. The new unit known as the size 2FA-60 angle



grinder, is said to have enough power to provide fast, safe, and efficient operation on practically all surface grinding, cut-off and sanding jobs. Speed, at 90 psi. air pressure, is 6,000 r.p.m. Two types of "dead" handles are available for the grinder, one straight, and one 30 deg. off of straight. These han-

(Continued on page 578)



## COMPRESSION ANCHORS Are Better for Maintaining Line and Gage

*Here's Why...*

### **Let's Get Down to "Brass Tacks"**

This is one of a series of factual, down-to-earth advertisements on rail anchors. Look for others in this series telling you why, how and where COMPRESSION ANCHORS are a better buy!

The above picture, made on busy main line track, is revealing. Note in particular how closely Compression Rail Anchors hold the rail to the outside shoulder of the tie plate. As every trackman knows, close, uniform holding of the rail to the tie plate is important in maintaining line and gage. This in turn means better running track—joints are held in line and spotty wheel flange wear is avoided. There is less wear and tear on ties, tie plate shoulders and rail.

## THE RAILS COMPANY

General Office

178 GOFFE STREET, NEW HAVEN 11, CONN.

ST. LOUIS, MO.

HOBOKEN, N. J.

CHICAGO, ILL.



## LONG CONVEYORS



can be turned into

## SHORT CONVEYORS



when you use

## REDI-FAB CONVEYORS

FOR DETAILS  
GET THIS  
BOOK



**THIS FREE BOOK**

see your B-G distributor or write

**Barber-Greene**  
AURORA, ILLINOIS, U. S. A.

## YOUNG ENGINEERS WANTED

Southwestern railroad seeking qualified young engineers for positions in Maintenance of Way, construction, general office, and industrial work. Inquiries invited from current graduates, as well as men now employed as instrumentmen, draftsmen, estimators, supervisor trainees and junior men in all of these positions. Persons interested in employment opportunities with this line in Texas and Louisiana should forward letter of inquiry, giving age, marital status, education, technical training, field of preference, and experience, accompanied by recent photograph or snapshot, and sample of drafting work, care of this publication. All inquiries will be kept confidential.

Address Box 653

RAILWAY TRACK & STRUCTURES

79 West Monroe Street, Chicago 3, Ill.

dles may be attached to either side of the grinder, and the angle handle may be rotated to any one of four positions, thus adapting the tool for corner grinding or for right or left-handed operators. The 2FA-60 is equipped with a built-in lubricator and the motor is muffled to reduce noise. The exhaust deflector is adjustable to deflect the exhaust away from the operator. Heavy-duty ball bearing construction is used throughout.

## ROD FOR BUILDING UP DRIVER BURNS

THE Oxweld Railroad Service Company, a division of the Union Carbide & Carbon Corp., New York, has developed a welding rod specifically for use in building up driver burns. The new rod, the Oxweld Driburn rod, is said to deposit weld metal equal in hardness to rail steel and, therefore, wears at the same rate as the base rail steel reducing the possibility of secondary batter. The manufacturer claims that the Oxweld Driburn welding rod has the same flow characteristics as the Oxweld MW rod used to rebuild rail ends and that the two rods are perfect mates on jobs where both driver burns and rail ends are to be serviced. The Driburn rod, tipped with green for easy identification, is available in  $\frac{7}{16}$ -in. or  $\frac{1}{2}$ -in. diameters, in 36-in. lengths.

## SNOW DETECTOR TURNS ON SWITCH HEATERS

MOTOROLA, Inc., Chicago, has announced the development of a weather sensing device called the "Snow Detector," which can be employed to turn switch heating equipment on and off automatically. The unit, which is  $\frac{7}{8}$  in. in diameter, detects precipitation when the ambient temperature drops below 37 deg. F. (the normal borderline temperature for snow). An integral heater melts the snow and ice collected in the bowl of the device. No power is consumed by either the detector or the switch heaters at higher temperatures. Vertical rods placed around the edge of the unit prevent birds from nesting in the detector. Fully automatic, the detector will turn on heating elements whenever icing conditions exist. Up to 30 amp. at 117 volts can be switched by the detector unit without external relays.

## THE MONTH'S NEWS Railway Personnel

### Engineering

**B. F. Biaggini**, assistant to the chief engineer of the Texas & New Orleans, has been appointed executive assistant with headquarters at Houston, Tex.

**Bernard G. Gallacher** has been named assistant division engineer of the Western division of the Southern Pacific at Stockton, Cal.

**Philip E. Odom**, chief clerk to the vice-president-operation, St. Louis-San Francisco, has been appointed to the newly created position of special engineer in the office of the vice president-operation, with headquarters as before at St. Louis, Mo.

**J. P. Ensign**, assistant chief engineer of the Pittsburgh & Lake Erie at Pittsburgh, Pa., has been named assistant chief engineer, maintenance of way, and **R. E. Vandivort**, engineer maintenance of way, has been appointed assistant to the chief engineer.

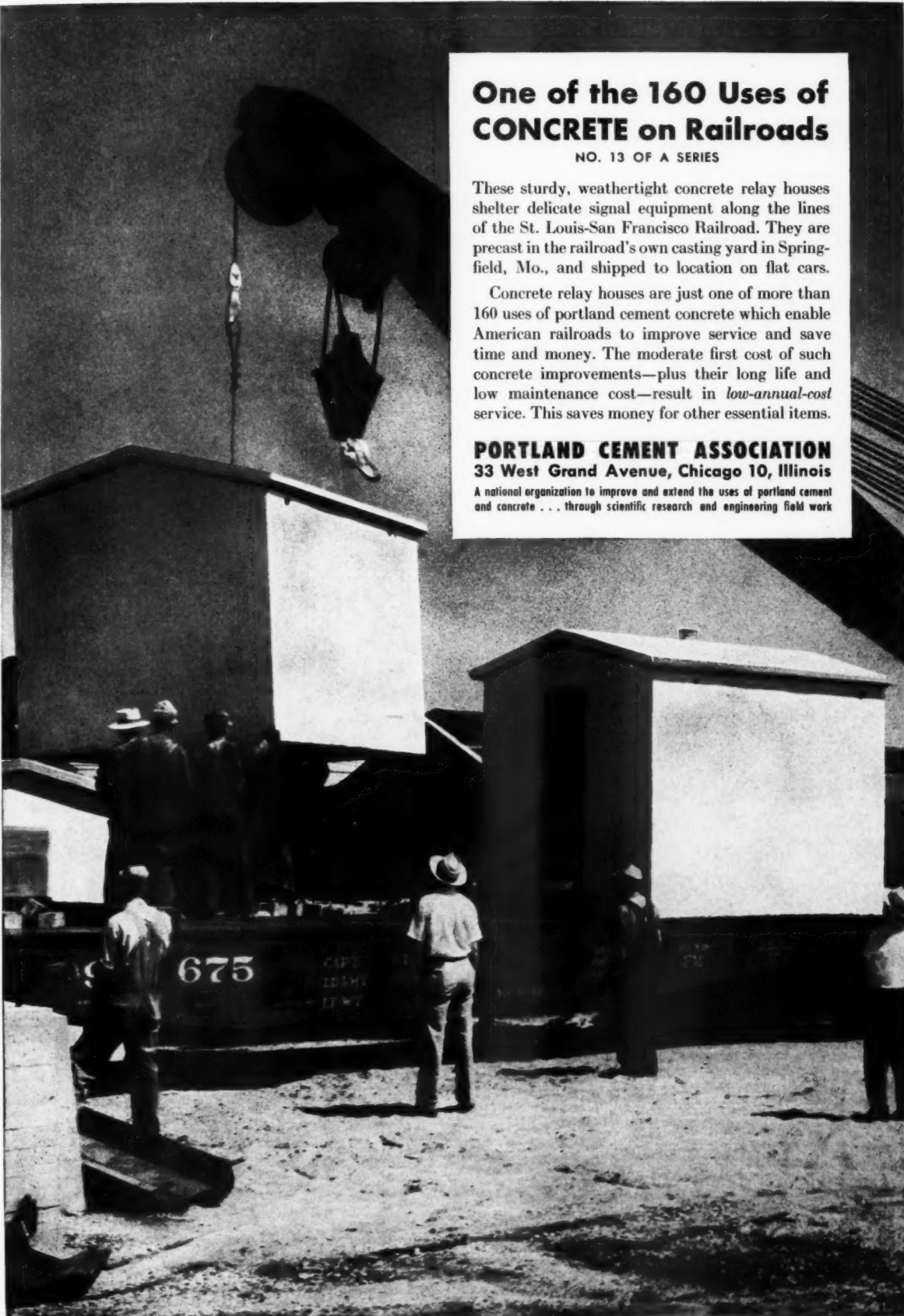
**Roy J. Gatewood**, whose retirement as division engineer on the Santa Fe at Wellington, Kan., was recently announced (RT&S, May, p. 492), was born August 31, 1883, at Shelbyville, Mo. He entered the service of the Santa Fe as a chairman on November 1, 1902, and subsequently served as rodman, transitman, building inspector and pilot engineer. In June



Roy J. Gatewood

1909, Mr. Gatewood was promoted to division engineer of the Rio Grande division at San Marcial, N. M., and in August 1915 was transferred to Wellington where he served as division engineer until his recent retirement.

**T. K. Peavy**, assistant engineer, construction department, of the Southern at Washington, D. C., has been appointed acting engineer in charge of Norris yard at Birmingham, Ala. **Ray B. Cromer**, assistant engineer, construction, at Norris yard, has been appointed assistant superintendent. (Continued on page 582)



## One of the 160 Uses of CONCRETE on Railroads

NO. 13 OF A SERIES

These sturdy, weathertight concrete relay houses shelter delicate signal equipment along the lines of the St. Louis-San Francisco Railroad. They are precast in the railroad's own casting yard in Springfield, Mo., and shipped to location on flat cars.

Concrete relay houses are just one of more than 160 uses of portland cement concrete which enable American railroads to improve service and save time and money. The moderate first cost of such concrete improvements—plus their long life and low maintenance cost—result in *low-annual-cost* service. This saves money for other essential items.

### PORTLAND CEMENT ASSOCIATION 33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

## Railway Personnel (Cont'd)

visor, office of chief engineer maintenance of way and structures, Western lines, assigned to the Alabama Great Southern.

W. R. Wagner, assistant engineer on the Western division of the Chicago, St. Paul, Minneapolis & Omaha at St. Paul, Minn., has been promoted to division engineer of the Peninsula division of the Chicago & North Western at Escanaba, Mich. Mr. Wagner succeeds L. J. Deno who has been transferred to the Sioux City and Northern Iowa districts of the Iowa division at Sioux City, Iowa, succeeding B. S. Converse, who has resigned.

J. D. McFetridge, special engineer on the Canadian Pacific, has been promoted to division engineer of the Portage division, with headquarters, as before, at Winnipeg, Man., to succeed K. A. Dunphy, who has retired after 44 years of service. C. R. Pike, transitman at Regina, Sask., has been appointed special engineer to succeed Mr. McFetridge.

Mr. McFetridge, a graduate of the University of Manitoba, joined the CPR in 1942 and served at Wesaskiwin, Alta., and Two Hills and as roadmaster at Lloydminster, Alta. In February 1953, he was promoted to special engineer at Winnipeg—the position he held at the time of his recent promotion.

Mr. Dunphy, a graduate of the University of New Brunswick, served, during

his 44 years with the CPR, as division engineer at Calgary, Alta., Vancouver, B. C., Brandon, Man., and Fort William, Ont., prior to his appointment as division engineer of the Portage division at Winnipeg.

Mr. Pike, a graduate of the University of British Columbia, entered the service



J. D. McFetridge



K. A. Dunphy



C. R. Pike

of the CPR in 1946 at Regina, where he served as transitman up to the time of his recent promotion.

James T. Sullivan, whose promotion to assistant division engineer on the New

(Continued on page 584)

## IT COSTS **LESS** to protect bridge ties than to replace them . . .



The right photo shows a completed Libbey-ZONE application to a typical wood trestle. The white surface is simple, inexpensive gravel aggregate held in place by the Libbey-ZONE coating. Practically fireproof.

The photo to the left shows the ease with which the Libbey-ZONE Process permits application to any wood surface. Application is made by spray or brush. No skilled labor needed.



### Libbey-ZONE Process Reduces Tie Deterioration and Bridge Fire Hazard

You won't deny that replacing weather-worn bridge ties is costly and difficult. Libbey-ZONE process-treated bridge and trestle ties remain in service years longer than untreated ties . . . in fact, almost indefinitely. The carefully compounded asphalt-asbestos Libbey-ZONE coating is applied easily by unskilled hands . . . and immediately seals cracks, crevices and provides a weather-proof coating for the wood surface. To this is added a gravel aggregate that time-proved tests prove highly resistant to fires caused by live coals, fuzes, oil sparks, etc. For your vertical wood bridge supports, The ZONE Co. has developed new ZONE FIREPLATE . . . assuring remarkable resistance to damage from grass or prairie fires. The Libbey-ZONE Process is your road's surest and lowest cost insurance against bridge tie deterioration and the ever present fire hazard to untreated wood surfaces. We invite your inquiry . . . the facts and the proof are yours without obligation.

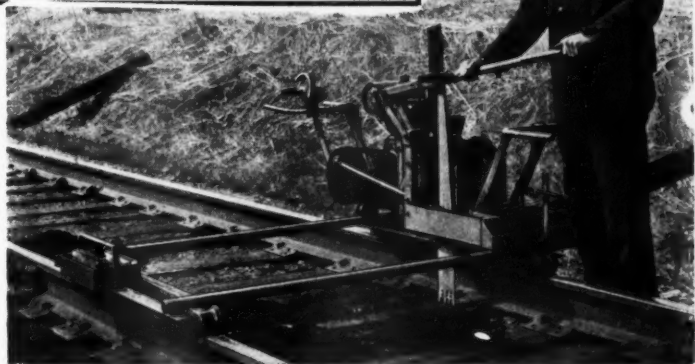
## THE ZONE COMPANY

Rail Products Division • Box 789 • Fort Worth 1, Texas



**No More Trenching!**  
**No More Jacking up Track!**  
**This WOOLERY**  
**Tie-removing Team Now Eliminates**  
**This Slow, Costly Method!**

Use the WOOLERY TIE-END REMOVER in conjunction with the improved model NU WOOLERY TIE CUTTER! It's the *perfect team* for greater savings on tie renewals—and gives *smoother, safer track, too!*



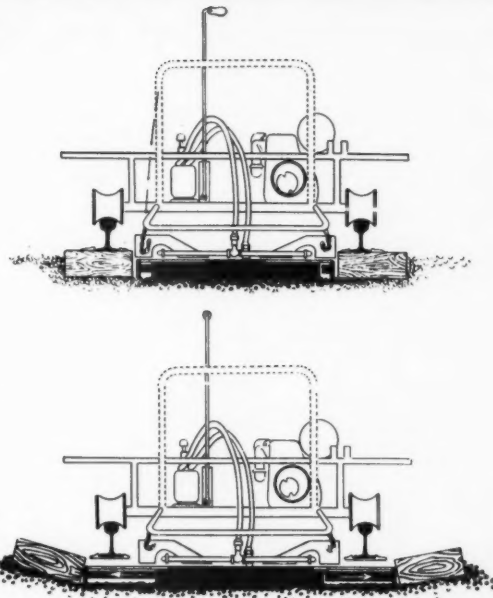
**T**he trend toward heavier rail and double shoulder tie plates has made removing tie-ends increasingly difficult. With the WOOLERY Tie-end Remover, this task can now be done *in less than a minute by one man with no more effort than that required to turn a valve!* See how simply and efficiently this WOOLERY team works—follow the "1-2-3" steps of tie-removal.

**1** After the tie has been cut on both sides by the WOOLERY Tie Cutter, the operator of the Tie-end Remover—who follows closely behind so that operators can assist each other in removing machines from track—lifts the center section out with tie tongs.

**2** A double-ended hydraulic cylinder is then lowered into the tie bed.

**3** A simple turn of the valve moves these two pistons outward, pushing the tie-ends completely clear of the rail—whether working with single or double shoulder tie plates! The crib is now open—and only the necessary amount of ballast is removed to admit the new tie.

There has been no trenching or jacking up of track—thus line and surface of track are maintained, soft spots and humpy track are eliminated—the new tie rests on a firm bed and little or no tamping is necessary!



**Woolery**  
**MACHINE COMPANY**  
 SINCE 1917 RAILWAY MAINTENANCE EQUIPMENT  
 2919 COMO AVE. S. E. MINNEAPOLIS 14, MINN.

Exclusive Export Representatives  
 PRESSED STEEL CAR CO., NEW YORK, N. Y.

**SPECIFICATIONS**

- ENGINE Wisconsin air-cooled 4-6 H.P.
- PUMP 1,500 P.S.I. built-in relief valve, 1 gal. reservoir.
- DRIVE Double V-belt.
- CYLINDER 3" bore, honed finish, double-ended, double-acting. Hardened, ground and chrome plated rams equipped with rod wipers.
- TRACK ROLLERS 6" self-centering, insulated.
- NET WEIGHT 360 pounds.
- CRATED WEIGHT 490 pounds.

Manufacturers of Tie Cutters, Tie End Removers, Tie End Trimmers, Power Bolt Tighteners, Spike Drivers, Motor Cars, Push Cars, Tool Transporters, Weed Burners, Extinguisher Cars, Chemical Sprayers, Tie Plate Spacers, Creosote Tie Sprayers, Rail Nippers, Flange-way Cleaners, Rail Joint Oilers, Power Joint Lubricators.

York Central at Mattoon, Ill., was recently announced (RT&S, May, p. 495), was born August 31, 1922, at Effingham, Ill. He graduated from the University of Illinois in 1943 and entered the service of the NYC as an assistant engineer at Mattoon on August 1, 1947, following four years of service in the U. S. Army. He was transferred to Indianapolis, Ind., in December 1948 and on February 1, 1951, was named assistant bridge and building supervisor at Springfield, Ohio. He returned to Mattoon as assistant engineer in September 1951 and on March 1, 1952, was promoted to office engineer—the position he held at the time of his recent

promotion to assistant division engineer  
at Mattoon.

**William D. Kirkpatrick**, whose promotion to assistant chief engineer, system, of the Missouri Pacific at St. Louis, Mo., was recently announced (RT&S, May, p. 494), was born August 15, 1908, at Cape Girardeau, Mo. He graduated from Rice Institute in 1930, and on August 8, 1934, entered the service of the MP as a field agent on the staff of the reclamation engineer at Houston, Tex. He was promoted to assistant engineer in 1937 and one year later was transferred to the chief engineer's office at St. Louis, where he was assigned to duties in connection with the mineral development of railroad lands.

From April 1943 until December 1945, he served with the U. S. Navy and on January 1, 1946, resumed his duties as



**William D. Kirkpatrick**

assistant engineer at St. Louis—the position he held at the time of his recent promotion.

**W. E. Chapman**, who was recently promoted to engineer maintenance of way on the Central of Georgia at Savannah, Ga. (RT&S, April, p. 408), is a native of Ozark, Ala., and was graduated from Alabama Polytechnic Institute in civil engineering in 1924. He began his career with the CGA in the engineering department at Savannah on February 15, 1925, having previously served with the Alabama Highway Department and as county



W. E. Chapman

engineer for Coosa County. While at Savannah he served as assistant and acting supervisor of track on the Savannah division for about two years. On September 1, 1936, he became supervisor of track. On March 1, 1942, he was named division engineer at Columbus—the position he held at the time of his recent promotion.

**C. R. Riley**, who was recently appointed engineer maintenance of way of the Eastern region of the Baltimore & Ohio at Baltimore, Md. (RT&S, April, p. 408), was born at Baltimore in 1908 and was graduated from Johns Hopkins University in 1929. After holding various positions in the signal and construction

*(Continued on page 586)*

## RAILWAY TRACK and STRUCTURES

**"WOLMANIZED\*" ...  
the most versatile  
pressure-treated  
lumber...because it's  
clean, nonoily,  
odorless, paintable...  
with service records to  
prove its durability.**

**American Lumber & Treating Company**

**General Offices:** 1601 McCormick Building, Chicago 4, Ill.

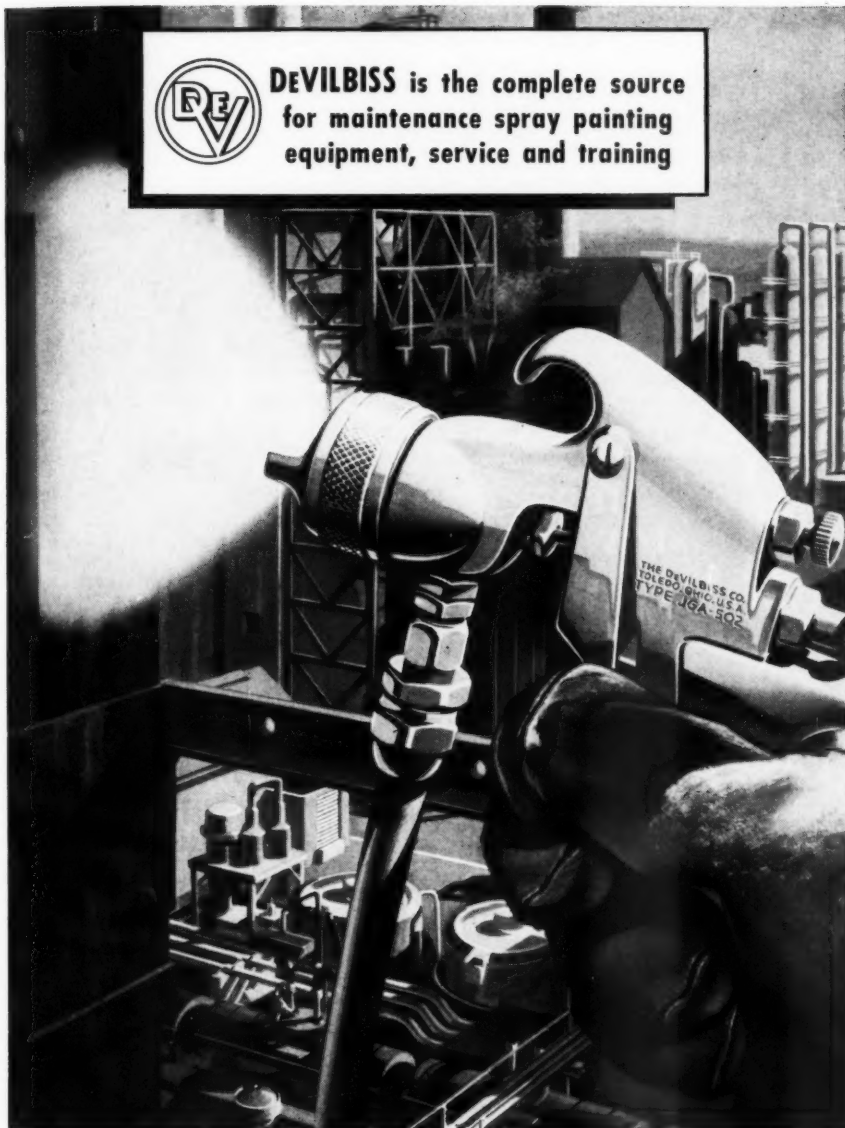
Branch Offices: Baltimore • Boston • Jacksonville, Florida  
Little Rock, Arkansas • Los Angeles • New York  
Portland, Oregon • San Francisco • Seattle

\*Wolmanized is a Registered Trademark of American Lumber and Treating Company.

**Wolmanized**  
PRESSURE TREATED  
**Lumber**  
Stops Rot and Termites



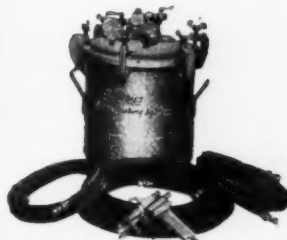
**DEVILBISS** is the complete source  
for maintenance spray painting  
equipment, service and training



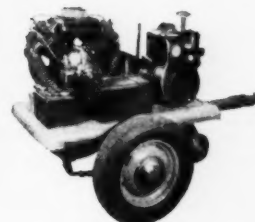
Spray Guns  
for every use



Portable Utility Outfits  
for minor paint jobs



One-man Spray Painting Outfits  
for heavy duty painting



Air Compressors,  
Portable and Stationary

## Best labor-saver a painter ever had!

Whether you paint complex structures of steel like this or any of the hundreds of jobs that are a painter's normal routine — a DeVilbiss Spray Gun transforms hours of painting into minutes.

You easily coat any surface, rough or smooth, flat or irregular, with a uniform, fully covering film of any thickness. Do jobs in one fourth the time . . . save up to 50% in costs.

DeVilbiss Spray Guns are exceptionally lightweight, comfortably balanced. Each is precision-made, quickly ad-

justed to spray large or small areas, easy to clean, and built for long, hard service. Sizes range from high-speed, large-capacity types to small precision models for delicate work.

Little wonder refineries, railroads, mills and factories find DeVilbiss spray equipment the fastest, most efficient and most economical way to paint.

To see how spray methods can help you, ask your local DeVilbiss supplier or our branch office. They're listed in the yellow pages of your phone book.

In the tuition-free DeVilbiss school, we will train your painters and maintenance foremen on all phases of the spray method. Write for application forms and dates of these one-week courses.

**THE DEVILBISS COMPANY, Toledo, Ohio**

Windsor, Ontario • London, England • Santa Clara, Calif.

Branch offices and Distributors in Principal Cities Throughout the United States, Canada and the World

RAILWAY TRACK and STRUCTURES

For additional information, use postcard, pages 579-580

FOR BETTER SERVICE, BUY

**DEVILBISS**



JUNE, 1953

585



## Railway Personnel (Cont'd)

division of the B&O up to the grade of field engineer, he was made assistant division engineer at Baltimore in 1943. He was later promoted to division engineer of the Baltimore East End division—the position he held at the time of his recent promotion.

**J. B. McKerley**, who was recently promoted to division engineer on the Central of Georgia at Columbus, Ga. (RT&S, April, p. 408), was born at Barnwell, S. C., and is a civil engineering graduate from Clemson College. Entering the service of the railroad as a draftsman at Savannah, Ga., on April 1, 1927, he be-

came assistant engineer on October 1, 1928, and supervisor of track on the Columbus division on September 1, 1945. Mr. McKerley was appointed supervisor of bridges on the Savannah division on November 16, 1945, and was transferred in that capacity to the Macon division on December 1, 1946, where he was serving at the time of his recent promotion.

**Wilson Morrow**, who recently retired as engineer maintenance of way of the Eastern region of the Baltimore & Ohio at Baltimore, Md. (RT&S, April, p. 408), was born at Dayton, Pa., and was graduated in civil engineering from Ohio Northern University in 1908. Entering the service of the Buffalo, Rochester & Pittsburgh (now B&O) immediately fol-

lowing graduation, Mr. Morrow occupied various positions on that railroad up to that of division engineer. With the absorption of the BR&P by the B&O in 1932 he continued as division engineer at DuBois, Pa., and Buffalo, N. Y., later being transferred in a similar capacity to the Baltimore East End division. He became engineer maintenance of way of the Eastern region in 1947.

**J. A. Caywood**, whose promotion to division engineer on the Baltimore & Ohio at Cincinnati, Ohio, was recently announced (RT&S, April, p. 410), was born in Kentucky in 1923 and is a graduate of the University of Kentucky. After experience in the testing laboratory of the university and as an employee of the



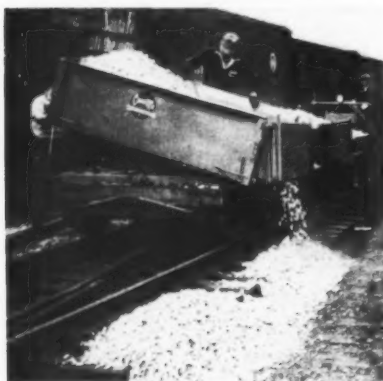
### HAYCO TRACK LINING SCOPE

(Pat. App. for)

Clamps to any size rail—ready for use in one minute. No assembly required. Low price in-

cludes rugged Carrying Case. Six-power telescope gives hair-line accuracy up to 1000 feet or more. Even an inexperienced foreman can immediately get results of almost transit accuracy. Companion device—HAYCO Surfacing Scope—also available.

### CONVERTO PORTABLE DUMP UNIT



Just slip it onto push car (or flat-bed auto truck)—dump it by self-contained hydraulic lift—slip it off to reconvert to flat platform. Available in 1-Yard and 2-Yard capacity.

**The BRICE HAYES Co.**  
7206 W. Everell Ave.  
Chicago 31, Illinois

### THREE LOW-COST PROVED DEVICES

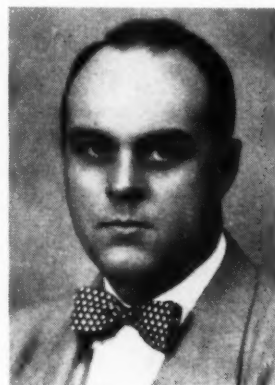
for daily use  
in perfecting  
your present track

● **CONVERTO** handles gang-size loads of ballast, ties, spikes, rail anchors, scrap, etc. Ideal for yard cleaning, tunnel work, hauling aggregate, concrete and coal. **HAYCO Track Lining Scope** should be kept on each motor car—to find and immediately correct deviations from regular line. **HAYCO Spike Locks** are applied instantly to individual spikes beginning to work loose. The "ounce of prevention" that may save renewing a tie. Write for illustrated circulars on all three.

### HAYCO<sup>®</sup> SPIKE LOCK

Pull a loose spike as soon as discovered. Drop Spike Lock into hole. Re-drive spike (forcing spurs into timber) and then bend top of Lock over spike with final stroke of maul. Will hold as long as tie is fit to remain in track. Shipped in quantities of 500 up.

(Reg. U. S. Patent Office)



J. A. Caywood

state highway department, he entered the service of the B&O in 1947 on the engineering corps at Cincinnati. In October 1950 he became assistant division engineer at Grafton, W. Va., continuing in that position until his recent promotion.

**R. A. Downey**, who was recently promoted to assistant division engineer on the Baltimore & Ohio at Connellsville, Pa. (RT&S, April, p. 410), was born in Rhode Island in 1925 and was graduated from Rhode Island State College. On

### Do You Qualify?—

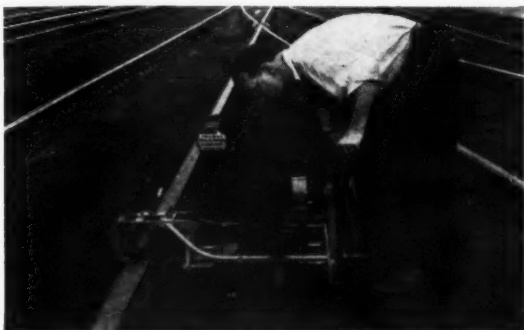
#### Do you have—

- Technical training,
- Railway engineering, or maintenance experience,
- Ability to write clear, concise English?

#### If so—

You may be the man we're looking for to fill a position as associate editor on our staff. Previous editorial experience is not necessary. This job has a future for the right man. Write:

**Railway Track & Structures**  
79 W. Monroe Street  
Chicago 3, Ill.



## SAVES AS IT DRILLS

The RTW P-43 Power Track Drill is designed for speed and economy—to put punch in your road work. Note these time- and cost-saving features:

- Aluminum Castings used throughout to reduce weight and facilitate handling.
- Telescopic extension on rail head bracket for drilling at heel of switch.
- Levelling device gives perfect alignment for drilling through angle bars and bare rails.
- Easily controlled screws for feeding bit. Chuck jaws take flat beaded bits up to 1 1/2 inches.

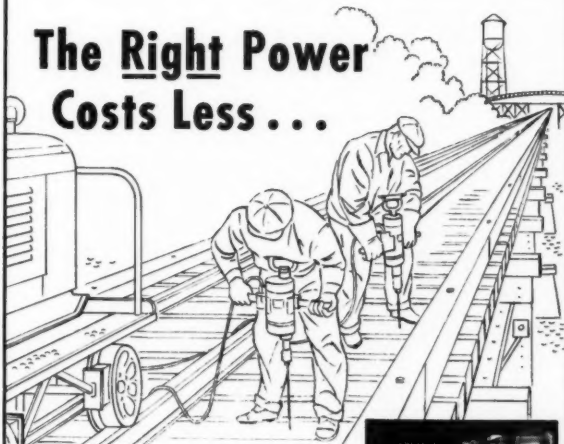
Write today for complete details on this and other RTW track maintenance equipment.

### Railway Trackwork Co.

3207 KENSINGTON AVE., PHILADELPHIA 34, PA.

TRACK MAINTENANCE EQUIPMENT  
RAIL GRINDERS—SWITCH GRINDERS—CROSS GRINDERS—  
TRACK LINERS—SURFACE GRINDERS—RAIL DRILLS—BALLAST EXTRUDERS—  
BIT SHARPENERS—TIE NIPPERS—GRINDING WHEELS—CUT-OFF WHEELS

## The Right Power Costs Less . . .



"U.S." Electric Plants  
are engineered for  
Railroad needs!

Choose the right size and right type Electric Plant for each job from more than 300 models in the "U.S." line. Installing a unit designed for the job insures efficient operation. (Keeps costs down, too!) For all maintenance needs and stand-by use on signal systems. Write for information.



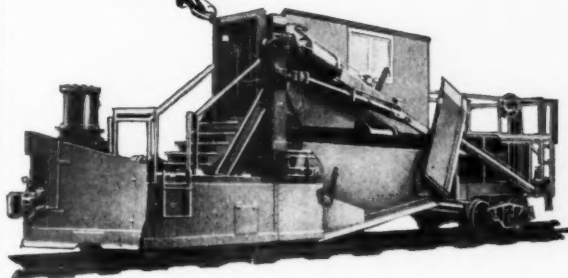
UNITED STATES MOTORS  
CORP.

603 Nebraska Street Oshkosh, Wisconsin



# JORDAN

## Service



## ...at your service!

When you invest in a Jordan . . . you get us, too.

You get the attention of Service Engineers dedicated to giving the world's best service to the world's best construction and roadbed maintenance equipment—Jordan equipment.

Jordan Service means working with you for the best possible operation and maintenance of your Jordan equipment. It's a policy of helping you get the most out of your Jordan by keeping it at top efficiency during its long and useful life. Jordan Service is a program of persistent preventive maintenance. It's an investment we make to get your sometimes "ailing" Jordan back in working order . . . in short order.

Your Jordan Service Engineer follows a planned schedule of calls on Supervisors around the country, but when you need him in a hurry, he comes . . . right now. Your schedule is his schedule. He's a good man to know—a thoroughly trained Jordan expert . . . at your service!

O. F. JORDAN COMPANY  
Walter J. Riley, Chairman of the Board  
EAST CHICAGO 3, INDIANA

# JORDAN

SPREADERS ★ DITCHERS ★ SNOWPLOWS

## Railway Personnel (Cont'd)

July 5, 1950, he entered the Technical Trainee Program of the B&O and after its completion was appointed assistant to the division engineer at Baltimore, which position he held at the time of his recent promotion.

**L. B. Waterman**, whose promotion to assistant division engineer on the Baltimore & Ohio at Newark, Ohio, was recently announced (RT&S, April, p. 410), was born at Elyria, Ohio, in 1920. He attended Washington and Jefferson College and was later graduated from Carnegie Institute of Technology. On July 5, 1950, he entered the technical trainee

program of the B&O and after successful completion was made assistant to the division engineer at Akron, Ohio, on September 1, 1952, where he remained until his recent promotion.

**E. M. Cummings**, whose promotion to division engineer on the Baltimore & Ohio at Garrett, Ind., was recently announced (RT&S, April, p. 410), was born in Massachusetts in 1920 and was graduated from Northeastern University in 1947 after completing military service. Following employment with the Maine Central as a student supervisor of track in 1941; as an inspector of the New York, New Haven & Hartford in 1942 and 1943; and as a draftsman on the Boston

& Albany in January 1948, Mr. Cummings entered the service of the B&O in February of the latter year as an assistant on the engineering corps at Baltimore. On October 1, 1948, he was made assistant division engineer at Newark, Ohio, later



E. M. Cummings

being transferred to a similar position at Connellsville, Pa., where he continued until his recent advancement.

## Track

**J. R. Miller**, assistant supervisor of track on the Illinois Central at Waterloo, Iowa, has been promoted to supervisor of track at DuQuoin, Ill., succeeding **J. A. Harrington**, who has been transferred to Clinton, Ill. Mr. Harrington succeeds **N. Anderson**, who has retired.

**John Koval**, assistant supervisor of track on the New York Central at Hudson, N. Y., has been promoted to supervisor of track of Subdivision 18 of the St. Lawrence division at Gouverneur, N. Y. Mr. Koval succeeds **D. M. Engler**, who has been transferred to Subdivision 29 of the Eastern division at Putnam Junction, N. Y.

**Francis L. Rees**, acting division engineer on the Santa Fe at Emporia, Kan., has been appointed roadmaster on the Enid, Stillwater and Cushing districts of the Oklahoma division, succeeding **Charles W. Hanson** who has been named assistant roadmaster on the First district. Mr. Hanson succeeds **Ted R. Summers**, who has been transferred to the Missouri division at Marceline, Mo.

**C. M. Correll**, assistant supervisor of track on the Southern at Birmingham, Ala., has been promoted to supervisor of track at Meridian, Miss. **J. E. Riddle**, extra gang foreman on the AGS, has been advanced to assistant supervisor of track to succeed Mr. Correll. **E. B. Funk**, who has served as section foreman at various locations on the Washington division, has been appointed assistant supervisor of track at Strasburg, Va.

Mr. Correll was born at Bakewell, Tenn., on April 9, 1909. Beginning his service with the Southern as a section laborer on the AGS in September 1925, he subsequently served as track apprentice,

(Continued on page 590)



The new National Optical Trackliner in use. Eliminates guesswork and gives true alignment.

**Speeds work—  
cuts costs—  
increases accuracy—  
on track lining jobs**

**Complete  
Optical Track  
Lining Service  
Rentals—Repairs**

The National Optical Trackliner is getting enthusiastic comment from railway men who have used it. A chief engineer says, "I have received nothing but very favorable remarks from my field forces who tested the instrument. . . . I hope to get a few more to at least provide one for each of my out-of-face surfacing gangs." A roadmaster says, "The use of this instrument will greatly reduce the cost of track lining." Another: "I believe each roadmaster could keep one going practically all year round." Another: "I recommend the company furnish one of these track lining instruments with each gang that is on a ballast job or has tangent track to line."

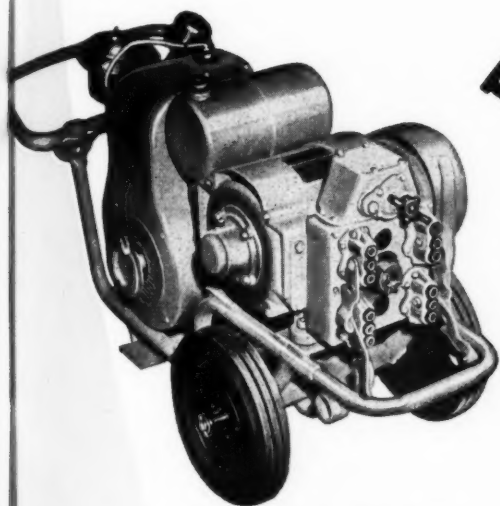
## NATIONAL BLUE PRINT CO.

Room 388 • Chicago Union Station Bldg.  
517 West Adams Street, Chicago 6, Illinois



**FINEST TRACK *at* LOWEST COST**

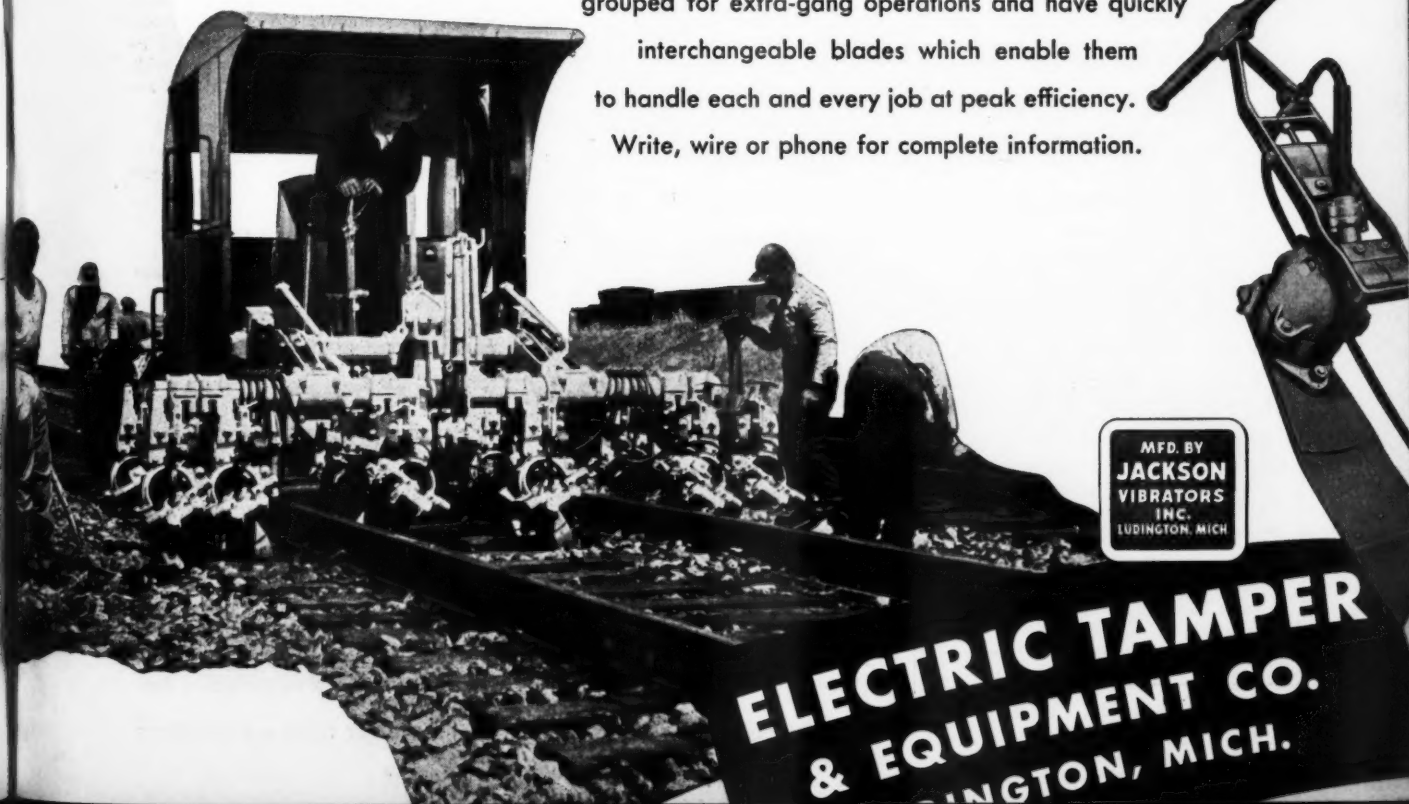
# *It's* a **SURE BET** **IF YOU USE EFFICIENT** **JACKSON** **TAMPING EQUIPMENT**



Model M-2 Power Plant serves 2 to 4 manually guided tie tampers. Rugged, compact and portable.

The experience of upwards of 60 leading roads and railroad contractors leaves no logical room for doubt—the JACKSON MULTIPLE is unrivaled in ability to put up the finest track at the lowest cost—regardless of lift or type of ballast. Just as efficient in very low-lift surfacing operation, this machine, in most instances, actually will save more than its cost in single season.

And for boosting section-gang productivity, there is nothing like JACKSON 4-tool outfits. They are easily portable, readily grouped for extra-gang operations and have quickly interchangeable blades which enable them to handle each and every job at peak efficiency. Write, wire or phone for complete information.



MFD. BY  
**JACKSON**  
VIBRATORS  
INC.  
LUDINGTON, MICH.

**ELECTRIC TAMPER  
& EQUIPMENT CO.  
LUDINGTON, MICH.**

**\*For the 101 railway jobs  
that require fastening  
into steel or concrete**



## **Ramset JOBMASTER HELPS MEET TIME LIMITS AND BEAT ESTIMATED COSTS**

Show us a job that requires fastening something into steel or concrete. We'll give you odds that you can do it faster, easier, at less cost with the RAMSET JOBMASTER and Tru-Set Fasteners.

It takes less than a minute to load power charge and fastener into the compact, lightweight, portable JOBMASTER. Place against work, pull trigger and RAM! The job is done. Up to 50 fasteners per hour is light work with JOBMASTER. And with 56 Tru-Set Drive Pins and Threaded Studs, you'll find the right one for the job.

That adds up to remarkable economies in time and money—that are being made every day by thousands of RAMSET users.

**\*Ask for "MODERN FASTENING METHODS"**  
New manual that gives you the "how" on your fastening work. Ask your RAMSET dealer for your copy and a demonstration on your own jobs . . . or mail the coupon.

## **Ramset Fasteners, INC.**

Ramset Division, Olin Industries, Inc.  
12117 BEEBE ROAD • CLEVELAND 11, OHIO  
Please send me MODERN FASTENING METHODS and details on use of RAMSET SYSTEM on railway work.

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

R-6

## **Railway Personnel (Cont'd)**

assistant extra gang foreman and extra gang foreman on that division until March 1925, when he was advanced to assistant supervisor of track at Birmingham.

R. E. Clancy, recently returned from military service, has been appointed assistant roadmaster on the Santa Fe's first district with headquarters at Wellington, Kan. Mr. Clancy succeeds C. C. Chamberlin.

### **Water Service**

R. C. Bardwell, superintendent of water supply on the Chesapeake & Ohio at Richmond, Va., has retired after 43 years of railroad service. Upon graduation from



**R. C. Bardwell**

the University of Illinois in 1909, Mr. Bardwell entered the service of the Missouri Pacific where he served as chemist, assistant engineer, chief chemist and engineer water service until 1923. In the latter year he joined the C&O as superintendent of water supply—the position he held until his recent retirement.

### **Bridge and Building**

R. C. Hutchison, bridge inspector on the Canadian National at Moncton, N. B., has been appointed bridge and building master for the Halifax division, with headquarters at Halifax, N. S., to succeed M. J. Wilkie, who has retired.

### **Special**

K. S. Casey has been appointed assistant superintendent of work equipment on the Chicago, Milwaukee, St. Paul & Pacific with headquarters at Miles City, Mont.

### **Obituary**

Reginald N. Wade, retired engineer maintenance of way of the Chicago Transit Authority, died recently.

J. W. Jones, regional engineer of the Baltimore & Ohio at Baltimore, Md., died recently.

William T. Dorrance, retired consulting engineer of the New York, New Ha-

ven & Hartford, died on April 7 at New Haven, Conn., at the age of 79.

Alfred L. Moorshead, civil engineer, and formerly industrial engineer for the Erie, died recently at the age of 75. During World War I, Mr. Moorshead commanded American Expeditionary Forces engineers, and was in charge of organizing the 48th Engineering Regiment.

James D. Moffat, retired chief engineer of the Western region of the Pennsylvania, died May 18 in St. Petersburg, Fla.

Mr. Moffat was born in Washington, Pa., and graduated from Washington and Jefferson College in 1904. He entered the railroad and interurban construction busi-



**James D. Moffat**

ness in 1905, and on September 30, 1907, entered the service of the PRR as a transitman in the office of the chief engineer of the Southwest system at Pittsburgh. He successively served as instrumentman, engineer in charge, assistant engineer, assistant to the chief engineer, and on April 1, 1943, was promoted to chief engineer of the Western region with headquarters at Chicago. Mr. Moffat retired June 1, 1952.

## **Association News**

### **American Railway Engineering Association**

The secretary's office has notified all chairmen of standing and special committees that requests for appropriations for research work during 1954, to be carried out with the cooperation of the research staff, Engineering Division, AAR, must be in the secretary's hands by July 1.

The following committees of the association have scheduled meetings to be held during the month of June: The Committee on Buildings will meet on June 4 and 5 at the Hotel John Marshall, Richmond, Va. Tentative arrangements are being made for an inspection trip to historic Williamsburg on the second day.

The Committee on Masonry will meet June 18 and 19 at the Bellevue-Stratford Hotel, Philadelphia, Pa. An inspection trip to see the Pennsylvania's new ore unloading dock, the Walnut Lane prestressed concrete highway bridge, and other projects, is being arranged. In addition, a trip to Lehigh University, Bethlehem, Pa., is being planned on June 20 to observe tests on prestressed concrete girders being conducted by Professor W. J. Eney. The Committee on Highways has scheduled a meeting at Richmond, Va., June 18 and 19. The Committee on Records and Accounts will meet on June 24 and 25 at the Ambassador Hotel, Atlantic City, N. J. The Committee on Yards and Terminals will meet at Detroit, Mich., on June 22 and 23. The Committee on Economics of Railway Location and Operation will meet June 25 and 26 at the Marlborough-Blenheim Hotel, Atlantic City, N. J., and the Committee on Impact and Bridge Stresses will hold a two-day meeting at the AAR Central Research Laboratory, Chicago, on June 9 and 10.

#### Track Supply Association; Bridge and Building Supply Association

Continued interest is reported in the joint exhibition of the Track Supply Association and the Bridge and Building Supply Association to be held September 14-17 at the Coliseum, Chicago. Space has been assigned during the past month to four additional firms, none of which have previously displayed their products at this show. Information about the few booth still available may be obtained from Lewis Thomas, director of exhibits, 59 E. Van Buren street, Chicago 5.

#### Metropolitan Maintenance of Way Club

The annual meeting of the club, with election of officers, was held on April 28 at the Hotel Sherburne, New York. In addition to 102 members, there were nine guests in attendance.

The main feature of the evening was an open forum discussion on "Snow Control at Switches," which was preceded by short talks on "The Economics of Gas Switch Heaters," by F. Youngwerth, as-



# the BIG LIFT for track maintenance!

## SIMPLEX TRACK JACKS

No other jacks compare  
for speed, ease of use  
and **DEPENDABILITY**

### ALUMINUM ALLOY

1/3 Less weight—no reduction in strength or capacity



#### No. A5

Speeds surfacing, lining or tie plate removal. Capacity, 15 tons; lift, 5'; weight, only 28 lbs.

#### No. A17

For general track work. Capacity, 15 tons; lift, 13'; weight, only 41 1/2 lbs.



#### No. 217A

Tough, rugged "old faithful". Capacity, 15 tons; lift, 13'; weight, 60 lbs.

### OTHER SIMPLEX TIME SAVERS

**RAIL EXPANDERS**  
For speeding up lining of crossings, spreading and pulling rail without service interruption. Avoids battered rail ends, bolts and crossings. 25 and 30-ton capacities.

#### TRACK SHIFTERS

Permit quick shifting of heavy track in any ballast condition...enable a 4-man crew to do the work of a 24-man ballasting gang.

#### G-Y TIE SPACERS

Reduces spacing and straightening time—saves ties from being sledged. Fit any type of rail.

Send for Bulletin:  
"Track 50"



#### No. 16A

Highest lift of any surfacing jack; full 6'1" Lower toe—1 1/4" — gets under rail without removing ballast. Trips from either side. Capacity, 15 tons; weight, 45 lbs.

**Simplex**  
LEVER - SCREW - HYDRAULIC  
**Jacks**

TEMPLETON, KENLY & CO., 1026 S. CENTRAL AVE.  
CHICAGO 44, ILLINOIS



## Association News (Cont'd)

stant signal engineer, Erie; "The Economics of Electric Switch Heaters," by E. V. Grogan, supervisor of track, New York Central; and "The Economics of Snow Removal by Pneumatic Means," by Lloyd J. Gilmore, general roadmaster, Great Northern.

In the election of officers Ralph I. Frame, supervisor of track, New York City Transit System, was elected president to succeed Arthur Price, division engineer, Erie; E. V. Grogan succeeds Mr. Frame as first vice-president, and A. H. Whisler, assistant engineer, Pennsylvania, succeeds Mr. Grogan as second vice-pres-

ident. John S. Vreeland, vice-president, Simmons-Boardman Publishing Corporation, was re-elected secretary-treasurer.

The next meeting of the club will be the annual outing, which will be held at the Out O'Bounds Aero & Golf Club at Suffern, N. Y., on Thursday, June 4.

### Mississippi Valley Maintenance of Way Club

The annual meeting of the club was held on May 11 at the Hotel DeSoto, St. Louis. The principal speaker was G. M. Magee, director of engineering research Engineering Division, Association of American Railroads, whose subject was

"Research for Longer Tie Life." His remarks were illustrated by slides.

In the election of officers, A. B. Chaney, assistant chief engineer system-maintenance, Missouri Pacific, was advanced from first vice-president to president; W. J. Hedley, assistant chief engineer, Wabash, was advanced from second vice-president to first vice-president; and E. L. Anderson, chief engineer, St. Louis-San Francisco, was elected second vice-president. New directors, elected for two years, are R. W. Schmidt, assistant to president and chief engineer, Manufacturers Railway and St. Louis & O'Fallon; J. L. Loida, chief engineer, Illinois Terminal; and E. C. Ackerman, superintendent (Terminal), Chicago, Burlington & Quincy.

Philip E. Odom, special engineer, St. Louis-San Francisco, was re-elected secretary-treasurer. In making his annual re-

(Continued on page 594)

# BEALL SPRING WASHERS

ARE USED BY THE

# Millions

IN THE RAILROAD INDUSTRY

### BEALL Hi-Duty

#### SPRING WASHERS

are made especially to stand the strain of the heavy-duty rail service required by today's high-speed freight and passenger trains.

BEALL washers are strong and tough, yet provide the necessary "springing action" required at rail joints, frogs and crossings. Made especially for railroad service according to the exact dimensions specified by the A.S.A. and A.S.M.E.

**BEALL TOOL DIVISION**  
of Hubbard & Co., EAST ALTON, ILL.

**BEALL**  
SPRING WASHERS

SPRING WASHER SPECIALISTS FOR **30** YEARS

## Meetings and Conventions

**American Railway Bridge and Building Association**—Annual meeting, September 15-17, 1953, Conrad Hilton (Stevens) Hotel, Chicago. Elise LaChance, Secretary, 431 S. Dearborn street, Chicago 5.

**American Railway Engineering Association**—Annual Meeting, March 16-18, 1954, Chicago. Neal D. Howard, Secretary, 59 E. Van Buren street, Chicago 5.

**American Wood-Preservers' Association**—W. A. Penrose, Secretary-treasurer, 839 Seventeenth street, N. W., Washington 6, D. C.

**Bridge and Building Supply Association**—L. R. Gurley, Secretary, 201 North Wells street, Chicago 6.

**Maintenance of Way Club of Chicago**—E. C. Patterson, Secretary-treasurer, Room 1512, 400 W. Madison street, Chicago 6.

**Metropolitan Maintenance of Way Club**—Secretary, 30 Church street, New York.

**Mississippi Valley Maintenance of Way Club**—P. E. Odom, Secretary-Treasurer, Room 1008, Frisco Building, 906 Olive Street, St. Louis 1, Mo.

**National Railway Appliances Association**—J. B. Templeton, Secretary, 1020 So. Central avenue, Chicago 44; Lewis Thomas, Assistant Secretary, 59 East Van Buren street, Chicago 5.

**Railway Tie Association**—Annual meeting, October 14-16, 1953, Biltmore Hotel, Atlanta, Ga. Roy M. Edmonds, Secretary-treasurer, 1221 Locust Street, St. Louis 3, Mo.

**Roadmasters' and Maintenance of Way Association of America**—Annual meeting, September 15-17, 1953, Conrad Hilton (Stevens) Hotel, Chicago. Elise LaChance, Secretary, 431 S. Dearborn Street, Chicago 5.

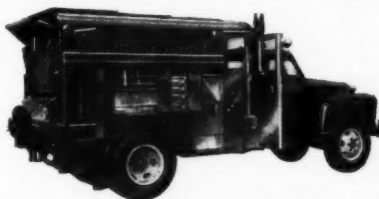
**Track Supply Association**—Lewis Thomas, Secretary, 59 E. Van Buren street, Chicago 5.

# When you're "up in the air" about bridge maintenance

Simplify "overhead" maintenance with the Holan heavy-duty hydraulic tower. This new tower is completely automatic with push button controls on the platform, in the cab or in the body interior. Platform can be raised to 30 feet and lowered to approximately 10 feet, 3 inches. On the model illustrated, the platform can be rotated 330 degrees.

This Holan hydraulic tower gives your men a working area approximately 20 feet wide for all heights to about 36 feet. When it is mounted with one of Holan's maintenance bodies, your crew has all necessary equipment and supplies right at hand.

## Complete line of bodies for railroad maintenance and service



Holan construction and maintenance bodies can be mounted on any chassis with CA dimension from 60" to 120". All models can be furnished with or without a built-in crew compartment.



Holan general service bodies include open top models, low roof models and high roof models. They can be mounted on any chassis with 1/2 ton to 1 1/2 ton rating.

### DISTRIBUTORS

Baker Equipment Engineering Co.  
Summit and Norfolk Sts., Richmond, Va.

Baker Equipment Engineering Co.  
2401 Hutchinson Ave., Charlotte, N. C.

Baker Equipment Engineering Co.  
Shop Road, Columbia, S. C.

Schetky Equipment Corp.  
1810 S. E. 10th Ave., Portland 14, Ore.

## J. H. HOLAN CORPORATION

BODIES AND ACCESSORIES FOR UTILITIES  
4100 West 150th Street Cleveland 11, Ohio

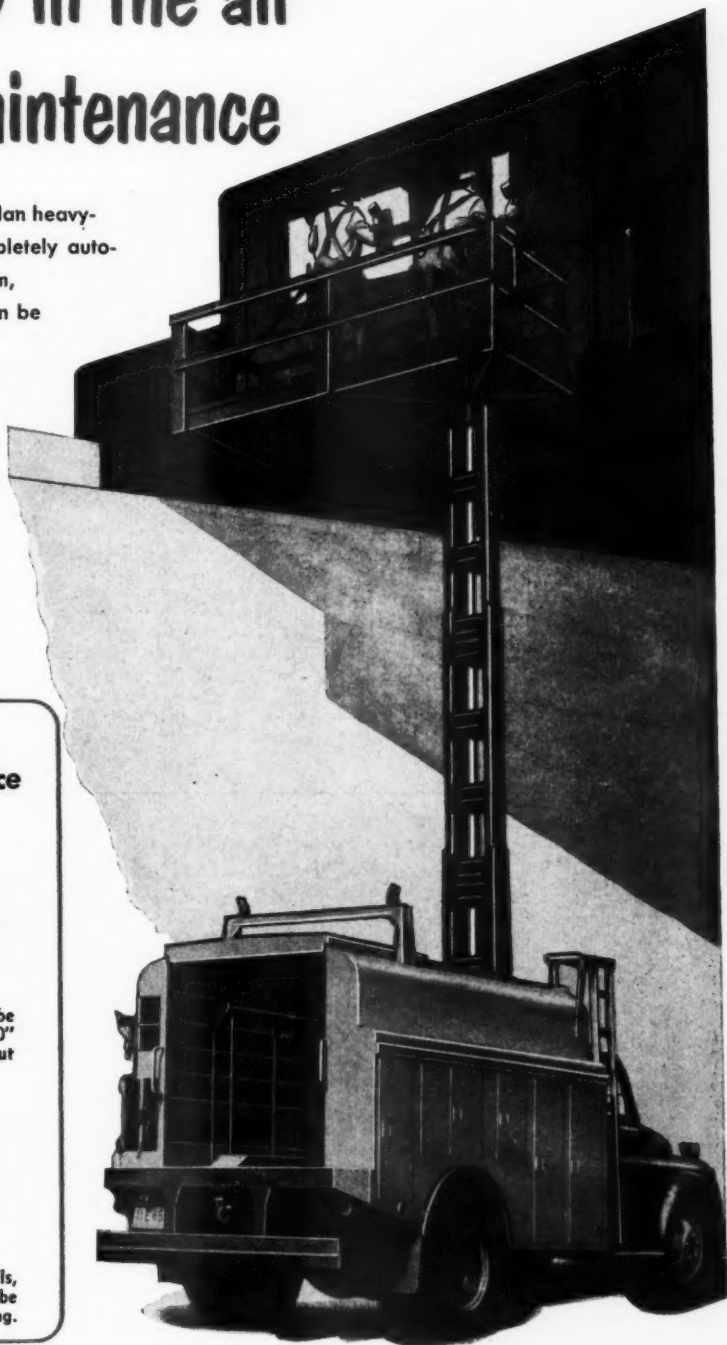
### DISTRICT SALES REPRESENTATIVES

2754 N. 92nd Street  
Milwaukee 10, Wis.

863 Wilson Drive  
New Orleans, Louisiana

6-03 161st Street  
Beechhurst, Queens, N. Y.

EXPORT REPRESENTATIVE: Copperweld Steel International, 117 Liberty St., N.Y. 6



## Association News (Cont'd)

port, Mr. Odom stated that, in the first year of its existence, the club had attained a total membership of 509, including 394 railway men, 114 supply company representatives, and one representative of a railway publication. Attendance at the meetings has averaged well over 200. It was announced that the next meeting would be held on September 21.

The meeting on May 11 was directed by the retiring president, V. C. Hanna, chief engineer, Terminal Railroad Association of St. Louis.

## Supply Trade News

### General

The W. T. Cox Company, Santa Ana, Cal., has opened an office in the Crawford Building, Kansas City, Mo. Ed Cox, manager of railway sales, will supervise the extension of operations throughout the middle west from the Kansas City office.

The Nelson Stud Welding Division of Gregory Industries, Inc., Lorain, Ohio, has recently been named national distributor for the Remington stud driver and

fastener studs manufactured by the Remington Arms Company, Inc., Bridgeport, Conn.

The Westinghouse Air Brake Company has purchased the earthmoving and related business of R. G. LeTourneau, Inc., including all fixed assets and machinery at Peoria, Ill., Toccoa, Ga., and its interest in an Australian subsidiary. The new business will be operated as the LeTourneau-Westinghouse Company, a subsidiary of Westinghouse Air Brake. No change in personnel is contemplated and all key executives will remain with the new company. Mr. LeTourneau will devote part of his time to LeTourneau-Westinghouse as consultant on development and research work. The Vicksburg, Miss., and Longview, Tex., plants will remain with R. G. LeTourneau, Inc., which will continue to operate them and manufacture special products for the U. S. Government, land-clearing equipment, cranes and other products not related to earthmoving. Edward O. Boshell, president and chairman of the board of Westinghouse Air Brake, stated: "This is a major step in Westinghouse Air Brake Company's diversification and expansion program. The company continues to occupy a dominant position in the railroad field . . . and through its acquisition of LeTourneau, LeRoi Company, Milwaukee, Wis., and George E. Failing Company, Enid, Okla., . . . is now a major supplier to the earthmoving, construction, and petroleum industries."

Robert H. Pearson, vice-president of the Gardner-Denver Company, Quincy, Ill., has retired to assume the management of Air Rentals, Inc., a newly formed



R. H. Pearson

organization which will distribute Gardner-Denver and allied lines of equipment for mining and construction.

Mr. Pearson served Gardner-Denver for 37 years during which time he held the positions of branch manager and vice-president and sales manager for construction and oil field equipment.

Milton J. Hassan, whose appointment as vice-president of engineering and operations of the Trackwork Division of the Taylor-Wharton Iron & Steel Co., was recently announced (RT&S, May, p. 514), joined the company as a draftsman in 1918. He held responsible engineering positions until 1937 when he was named southern and plant manager of the Birmingham (Ala.) operation. In 1949 he was



Milton J. Hassan

appointed vice-president of engineering in the Trackwork Division, with headquarters at Cincinnati, Ohio. Mr. Hassan's new position will entail full control of engineering, production and manufacturing for the firm's three trackwork plants, located in Birmingham, Cincinnati, Ohio, and Easton, Pa.

John Brandenburg has been appointed central sales manager of the American

**The IMPROVED**  
**GAUTIER**

**the finest in**  
**RAIL ANCHORS**

Write for complete information

**MID-WEST FORGING & MANUFACTURING CO.**

General Offices: 38 South Dearborn Street, Chicago 3, Illinois • Mfg. Plant, Chicago Heights, Illinois



**Manganese Steel Division of the American Brake Shoe Company**, with headquarters in Chicago Heights, Ill.

**E. R. Glover** has been appointed technical director of the railroad department of the **Dearborn Chemical Company**, Chicago. Mr. Glover was formerly assigned to field technical service with the firm's laboratory staff cleaner division.

**R. H. Hill**, assistant general manager of transportation sales for the **Sherwin-Williams Company**, Cleveland, Ohio, has been named general manager of the Transportation Sales Division, succeeding **C. B. Bull**, who is on leave for reasons of health.

**Hugh Black** has been appointed railroad representative in the central United States for the construction materials division of the **General Electric Company**.

**S. C. Johnson**, vice-president and head of the Eastern Division railroad department of the **Dearborn Chemical Company**, Chicago, has been elected a member of the firm's board of directors.

**John R. Cary** has been elected president of the **Browning Crane & Shovel Co.**, Cleveland, Ohio, succeeding his father, **Sheldon Cary**, who has been elected chairman of the board. Other new officers of the company are **D. H. Leuszler**, vice-president, **C. F. Barry**, treasurer, and **J. F. Svoboda**, secretary. **Arthur S. Meyer**, executive vice-president, and **George T. Stalley**, assistant secretary and assistant treasurer, have retired.

**Frank Norman**, treasurer and assistant manager of sales of the **Cleveland Frog & Crossing Co.**, Cleveland, Ohio, has been promoted to manager of sales succeeding **Howard I. Prentice** who will continue his services as vice-president, special assignments. **Louis T. Norman** has been named treasurer and **Richard W. Purdy** has been appointed sales engineer.

Mr. Frank Norman joined the **Cleveland Frog & Crossing Co.** in 1925 after



Frank P. Norman

serving with the **Pennsylvania**, and was appointed treasurer in 1942. He entered the sales field in 1948 and was subsequently named assistant manager of sales.

(Please turn to page 596)

# ORTON

## *Torque-Control*

POWER CONTROL  
WEAR CONTROL

- NO JERKING, slip-clutching or racing engines!
- CUSHIONED SHOCK—only the exact amount of power needed to move the load!

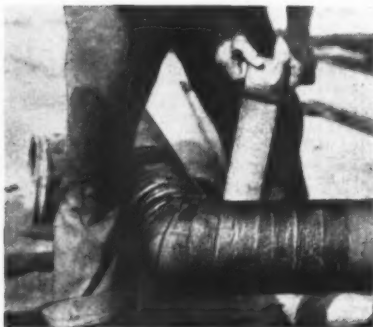
SEND FOR CATALOG 34

**ORTON CRANE AND SHOVEL COMPANY**  
608 SOUTH DEARBORN STREET • CHICAGO, 5, ILLINOIS

## TO COMBAT CORROSION

Specify **TAPECOAT**

...the Original Coal Tar  
Tape Protection for Pipe,  
Pipe Joints, Couplings  
and Tanks



TAPECOAT is a coal tar coating with a tar-saturated, close-woven fabric as a carrier for easy application, providing a *natural* protection against corrosion.

TAPECOAT serves as both bond and protection...requires no foreign adhesive.

TAPECOAT resists moisture, acids, alkalis, soil stress, electrolysis, chemical fumes, fly ash, salt water, salt-laden air, barnacles and other severe corrosive and abrasive conditions.

TAPECOAT is clean to handle and easy to apply by spiral or "cigarette" wrapping with the use of a torch to bleed the coating for a bond to the surface. It cuts maintenance and replacement costs.

### SIZED TO THE JOB

TAPECOAT comes in rolls of 2", 3", 4", 6", 18" and 24" widths to meet varying requirements.

TAPECOAT has proved its dependability for gas and oil companies, railroads, telephone companies, air lines, ship builders and operators, water and sewage works, chemical and industrial plants, engineers and contractors... in combating corrosion both underground and above ground.

**PROVED IN  
SERVICE  
SINCE 1941**

Write for descriptive brochure and prices

**The TAPECOAT Company**

**Originators of Coal Tar Tape Protection**

1541 Lyons Street, Evanston, Illinois

## Supply Trade News (Cont'd)

John W. Schoen, whose appointment as vice-president and general sales manager of R. G. LeTourneau, Inc., Peoria, Ill., was recently announced (RT&S,



April, p. 418), graduated from the University of Iowa. After an association with the firm of Logan Long, Chicago, Mr. Schoen served in various sales positions with the E. R. Squibb Pharmaceutical Company and the Firestone Tire & Rubber Co. In 1943 he joined the LaPlante-Choate Company, Cedar Rapids, Iowa, and rose to the position of vice-president in charge of sales. Early this year, when the Allis-Chalmers Company acquired the LaPlante-Choate properties, Mr. Schoen resigned to become consultant for the David Brown Industries.



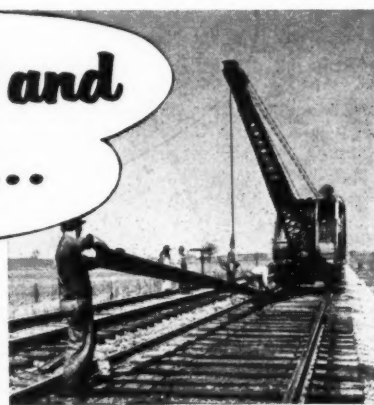
John W. Schoen

George P. Page, whose appointment as southern sales manager for the Taylor-Wharton Iron & Steel Co., with headquarters at Birmingham, Ala., was announced in the May issue. Mr. Page, formerly principal assistant engineer on the Norfolk Southern, will handle sales of all railroad trackwork and forge steel cylinder products in the southern market.

(Please turn to page 598)

**3 MEN and  
a BURRO...**

**A Real  
Production  
Team!**

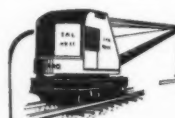


This Burro Crane, its operator and two men on the rail are setting a fast pace for the track gang to follow. Rail gangs equipped with a Burro Crane produce more work per shift at lower cost because Burros have the pace-setting speed and efficiency that helps them keep on schedule. Equally efficient with tongs, magnet, hook, bucket or dragline, Burro Cranes handle any job in stride. Fast travel speeds get them to the job in a hurry... heavy draw bar pull permits hauling work train and gang.

### Only Burro Cranes Have:

- Fast travel speeds... up to 22 MPH
- Draw Bar Pull of 7500 lbs. often eliminates need for work train or locomotive
- Elevated Boom Heels for working over high sided gondolas
- Short tail swing - will not foul adjoining track
- Low overall height - a Burro can be worked and loaded on a standard flat car

Write for Bulletins on Burro Cranes



**CULLEN-FRIESTEDT CO.**

1320 SOUTH KILBOURN AVENUE • CHICAGO 23, ILLINOIS



## PROLONG THE LIFE OF SWITCH POINTS



Q and C Manganese Switch Point Guards will prolong the life of the point many times and will help to keep traffic moving in yards and terminals, without delays caused by sharp wheel flanges climbing on worn points.

A full width is maintained on the head of the rail next to the guard, resulting in continued good fit for the point, eliminating chipping of the point.

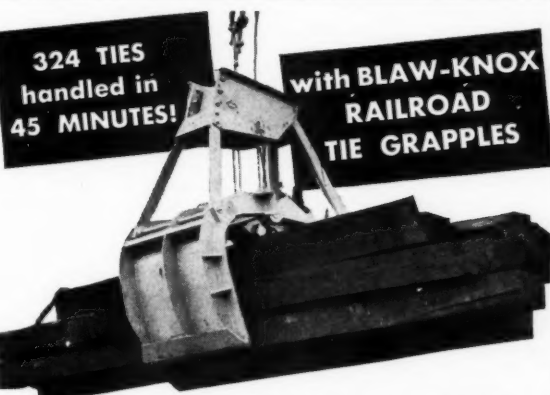
Order now to insure these savings for your railroad.

### THE Q AND C CO.

59 E. Van Buren St.  
Chicago 5

90 West Street  
New York 6

611 Olive St.  
St. Louis 1



HERE'S the fast, efficient tool you need to cut handling costs for any job of loading or unloading railroad ties. Check these Blaw-Knox features before you buy any grapple . . .

- Low grapple height (low headroom) permits maximum crane reach.
- Safe operation when handling creosoted ties from high side gondola cars.
- All welded construction permits maximum handling capacity for a crane of given size, without sacrificing strength.
- Efficient design allows deep penetration for a full load.
- Fast, safe crane operation results from firm gripping of the ties.

WRITE FOR BULLETIN 2404



#### BLAW-KNOX COMPANY

Blaw-Knox Equipment Division  
2106 Farmers Bank Bldg. Pittsburgh 22, Pa.  
Offices in Principal Cities

# If

you are interested in

## CLEANING BALLAST

*on your Railroad*



we stand on  
our record

*Just Ask the  
Railroads  
That have used us!*



OUR LATEST  
CUSTOMERS



### FRANK SPENO RAILROAD BALLAST CLEANING CO. INC.

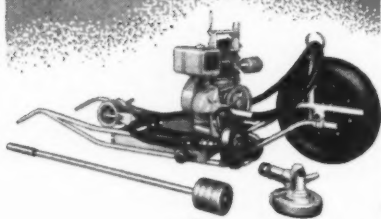
306 North Cayuga Street

Ithaca, New York



# Mall

## Model 23 COMBINATION RAIL GRINDER

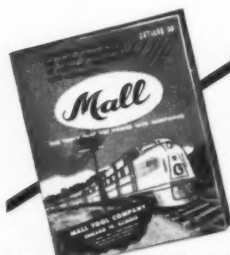


One  
Power Unit  
Does it  
ALL

surface grinding  
frog grinding  
rail slotting  
switch point  
grinding  
cross grinding  
wire brushing  
drilling

Here's a true multi-purpose machine built to handle rail maintenance and shop jobs. Can be furnished with an outrigger for any gauge track, insulated against interference with signal systems. The entire unit with outrigger can be rolled on the rails, following the operator from one rail joint to another. It can be moved off the track by one man and carried by two men. Develops 8 1/4 hp. with power ranges from 2200 to 3200 rpm. Weight 190 lbs.

40 Factory-Owned Service Warehouses Coast to Coast, To Serve Our Customers Quickly and Capably.



Send for  
this FREE  
Catalog

### MALL TOOL COMPANY

Railroad Dept.  
7738 S. Chicago Ave., Chicago 19, Illinois

Send me your FREE catalog of MALL Tools for the railroad industry.

Name \_\_\_\_\_

Dept. \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

RU-30

## Supply Trade News (Cont'd)

Sherman W. Richardson has been appointed industrial relations manager of the Oliver Iron & Steel Corp., Pittsburgh, Pa.

Paul V. Dimmick, sales manager of the Cleveland district of the J. H. Holan Corporation, Cleveland, Ohio, has been promoted to sales manager to take over supervision of the field organization. Arthur C. Frank, sales manager of the Transport Products Company, Cleveland, has been appointed Cleveland district sales manager to succeed Mr. Dimmick.

Henry E. Michael, associate editor of *Railway Track and Structures* and the *Railway Age*, has resigned to become manager sales service of the Matisa Equipment Corporation, Chicago, effective June 1. In his new position, Mr. Michael is serving in a liaison capacity between the sales manager of the company



Henry E. Michael

on the one hand and the salesmen, the operations manager and customers on the other. Mr. Michael was born on October 25, 1907 at Leeland, Va., and graduated from Lehigh University with a Bachelor of Science degree in civil engineering. He had previously served during summer

vacations as a laborer and assistant on the engineer corps of the Pennsylvania and as a rodman on the Lehigh Valley. Following his graduation from college, Mr. Michael returned to the Pennsylvania and served as an assistant on the engineer corps, as an inspector on electrification work, and as an acting supervisor of work equipment until 1934 when he was promoted to assistant supervisor of track. Three years later he was advanced to branch-line supervisor of track, serving in that capacity at two locations until in 1942 he was promoted to main-line supervisor. In 1945 he left the railroad to become superintendent of construction for a general contractor. In November 1946 he joined the Simmons Boardman Publishing Corporation as associate editor of *Railway Engineering and Maintenance* (now *Railway Track and Structures*) and of the *Railway Age*.

## Obituary

Walter W. Rector, president of the True Temper Corporation, Cleveland, Ohio, died recently at the age of 65.

## Trade Publications

(To obtain copies of any of the publications mentioned in these columns, use postcards, page 579).

**Roof Maintenance**—A 16-page brochure on the importance of proper roof maintenance has been announced by the Monroe Company, Inc. Titled "There Is a Difference," the booklet explains what constitutes a good roof coating. It compares the length of life of various types of cold process roof preservative compounds, and points out the advantages of Monroe Rufferseal roof coating. The brochure, fully illustrated with photographs, also explains how roof leaks can be stopped instantly, even while roof surfaces are wet.

**Concrete**—The theory and practice of obtaining a good concrete is the subject of a new booklet entitled "Plastiment Concrete Densifier," published by the Sika Chemical Corporation. Beginning with gel mechanics of cement-water reaction, the booklet discusses the factors affecting cement hydration and basic quality of concrete, and how these factors can be controlled to reduce cracking and increase concrete hardness and impermeability. The booklet contains eight pages of engineering information, illustrated with drawings, and includes tests, photographs and descriptions of outstanding engineering projects constructed with Plastiment concrete.

**Heaters; Heating Devices**—The General Electric Company has recently issued a very comprehensive catalog on GE Calrod electric heaters and heating devices. The 64-page, durably bound booklet contains complete descriptions, specifications, dimensions and prices for air, or clamp-on heaters, cartridge heaters, thermostats, switches, panel boards,

(Continued on page 600)



J. M. Riel, recently elected secretary of the T. J. Moss Tie Company, St. Louis, Mo.



turn *NIGHT* into *DAY*

**... at the flick of a switch**

Instant, brilliant light to flood the darkest work location makes every night job safe and efficient. That's the kind of utility that a Fairbanks-Morse hand lamp offers you—at the flick of a switch.

What about quality? F-M lamps have sturdy steel weather-proof cases, baked enamel finish. Triple silver-plated reflector for longer lasting reflection. Extra sure battery-to-lamp connections . . . no wires to fuss with or loosen.

What about price? From single cell to four-cell units, the F-M line of handy portable light units brings you daylight for all night jobs at minimum cost. Write us today for a complete catalog. Fairbanks, Morse & Co., Chicago 5, Illinois.

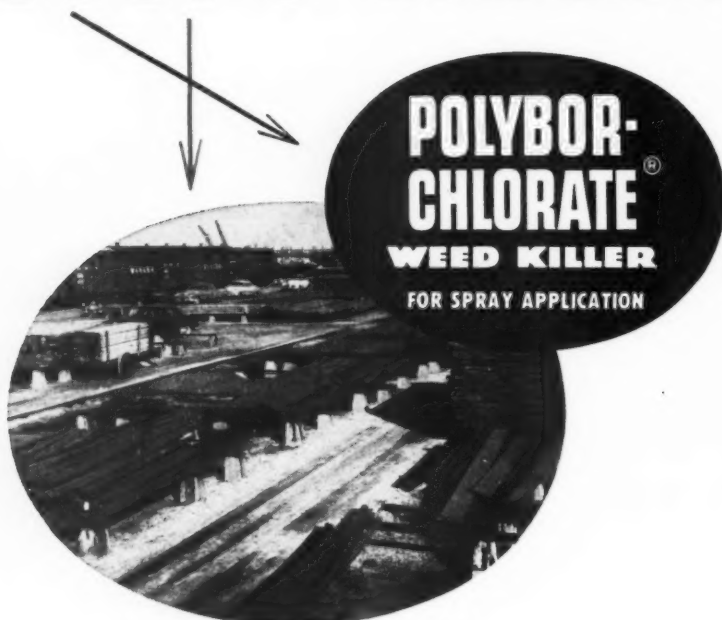


**FAIRBANKS-MORSE**

*a name worth remembering when you want the best*

RAIL CARS AND RAILROAD EQUIPMENT • DIESEL LOCOMOTIVES  
AND ENGINES • ELECTRICAL MACHINERY • PUMPS • SCALES  
WATER SERVICE EQUIPMENT • HAMMER MILLS • MAGNETOS

# STOPS WEEDS



*here's the Weed Killer with effective* **DOUBLE ACTION**

Polybor-Chlorate destroys weeds and grasses on contact and through root action... with lingering after-effects that prevent regrowth. This is one weed killer that can destroy all vegetation quickly and easily when applied properly! Polybor-Chlorate is so highly soluble that constant agitation of spray equipment is unnecessary. It's a labor saver and a money saver... ideal for destruction of weeds about yards, tie piles, sidings, buildings, etc. resulting in lower maintenance costs. Remember, one spraying may suffice to keep the treated area bare of growth for a year or more!

**NO FIRE HAZARD**

**FAST-ACTING  
APPLY WET OR DRY  
ECONOMICAL  
NONSELECTIVE**

**PACIFIC COAST BORAX CO.**

DIVISION OF BORAX CONSOLIDATED, LIMITED



*Sales Offices*

Representatives located in: CHICAGO • NEW YORK • SEATTLE • PORTLAND • CLEVELAND  
AUBURN, ALA. • KANSAS CITY, MO. • SAN FRANCISCO • NEW ORLEANS • DENVER  
MINNEAPOLIS • POCATELLO • HOUSTON • FORT WORTH • AMARILLO • PHILADELPHIA  
CALGARY, ALBERTA • Home Office: 630 SHATTOW PLACE, LOS ANGELES 5, CALIFORNIA

## Trade Publications (Cont'd)

transformers, fin-type heaters, glue pots, immersion heaters, insertion heaters, metal-melting pots, over heaters, soldering irons, strip heaters, tubular heaters and accessories, and natural and forced-convection type unit heaters. A process and application index is provided to assist the user in selecting the heater most suited to his needs. Engineering data and a listing of GE publications dealing with heating problems are also presented.

**Valves**—A new, 6-page, 2-color bulletin describing the Golden-Anderson "cushioned" automatic engine stop valve has been made available by the Golden-Anderson Valve Specialty Company. The bulletin, designated as S-3, features details of application, fabrication, installation and design for all sizes of valves. Complete specifications and dimensions are also provided.

**Track Cleaner**—A new 4-page, 2-color folder has recently been published by the Athey Products Corporation describing the Athey Force-Feed HiLoader track cleaner. The folder is illustrated with drawings showing the manner in which the machine operates and contains photographs showing it in use. Complete specifications are presented along with overall dimensions and clearances of the machine.

**Wood Control**—A four-page folder is now available describing Brulin Chemical Weed Controllers. Four types of weed and brush control products and their applications are presented. Described are Brulin Non-Selective Weed Killer, Brulin Brush-Off, Brulin's Dual-Purpose Weed Control, and Brulin 2,4-D Liquid Weed Killer. A list of companies using these Brulin products is also presented in the folder.

**Rail**—The L. B. Foster Company has recently issued a new catalog entitled "Rails" containing illustrations of rail sections. Illustrations are in profile complete with design dimensions, all in actual size for use in comparison with samples and for use with tracing drawings. Angle and splice bars are illustrated on each section from 12 lb. to 155 lb., inclusive, and on crane-rail sections from 104 lb. to 175 lb. Specification tables are presented with each drawing giving physical and structural data. Also contained in the 44-page booklet is a section devoted to the reconditioning process for relay rails, and structural uses for rails.

**Cranes & Shovels**—A series of eight articles discussing the "Use and Application of Power Cranes and Shovels" has been compiled by the Koehring Company. The articles, written by E. O. Martinson, Koehring vice-president in charge of engineering, are bound in a 32-page booklet and present detailed discussion on the basic principles of power shovel and crane operation. Aided by photographs, drawings, graphs and tables, the capabilities of various crane and excavator attachments are outlined along with prescribed requirements for most efficient operation of these machines. The details involved



in making a proper selection of this equipment for ordinary operating situations are also discussed. Two complete articles in the booklet are devoted to a discussion of "Safety Considerations with Excavators" and "Excavator Operating Costs," thus making the booklet a handy reference manual for excavator owners and operators.

**Ballast Distributors**—The McWilliams Ballast Distributor, a new track-mounted machine for placing ballast in position for tie tamping, is described in a 4-page bulletin recently issued by the Railway Maintenance Corporation. Included in the 2-color brochure are specifications, technical details and a series of photographs illustrating the principal operating characteristics of the machine.

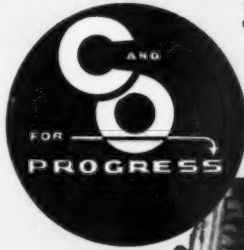
**Grader Attachments**—A complete listing of 20 attachments for Caterpillar motor graders is now available in a booklet entitled, "Attachments for your Caterpillar Motor Grader," published by the Caterpillar Tractor Company. The eight-page booklet carries pictures and discussions concerning the usefulness of 15 attachments manufactured by Caterpillar and five others manufactured by other firms for use on Caterpillar graders.

**Corrosion**—A new illustrated brochure, designed to help solve corrosion problems, has recently been released by the Tapecoat Company. Based on the company's experience in serving the gas and oil fields, transportation and communication, water, sewerage, chemical and industrial applications, the brochure presents practical suggestions to combat corrosion. It includes details on how and where coal tar protection can be used to best advantage and offers case histories to show how corrosive problems have been overcome in many fields.

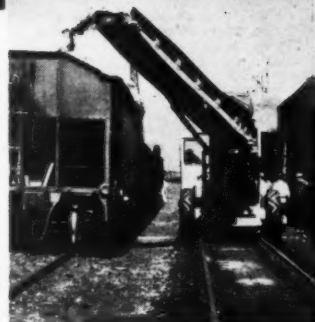
**New Oliver Tractor**—The Oliver Corporation has recently issued an 8-page, 2-color booklet describing the features of its new OC-18 crawler tractor. The publication points out the advantages obtained through the incorporation of air-steering in the new machine, and lists other design features found in the OC-18 which add to ease of operation and operator comfort. The booklet is amply illustrated with photographs of the tractor and contains a very comprehensive listing of specifications of the machine.

**Shovel-Cranes**—Publication of a 24-page, two-color catalog describing its 51 series shovel cranes has been announced by the Link-Belt Speeder Corporation. The fully illustrated catalog (No. 2428) covers Link-Belt Speeder's complete line of ½-yd. shovel cranes including the crawler-mounted LS-51, the truck-mounted HC-51 and the wheel-mounted MS-51 models. Photographs show the equipment under actual operating conditions. Included is comprehensive data covering the upper machinery, crawler, truck, and wheel-mounted lower mechanisms for each model. The new catalog also includes a detailed section on the operation, features and advantages of the power-driven hydraulic "Speed-o-Matic" controls with which the machines are equipped.

## "Our *Athey* HiLoader Track-Cleaner SAVES US \$2.00 PER TON Loading Spilled Coal!"



"Before, we used a gang of men, plus a foreman, a work train and a crane to clean up spilled coal in our yards in Russell, Ky. Now, with our Athey Track-Cleaner, we only use an operator for the HiLoader, a helper and one laborer. Where it used to cost us \$3.30 per ton to load this spilled coal, we can now load it at a cost of only \$1.30 per ton and we do the job faster and more efficiently, too," reports the local maintenance officer on the Chesapeake and Ohio Railway.



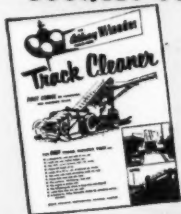
The C & O has a novel method of keeping clean its 52-track yard at Russell, Ky., one of the largest in the country. They first use their Athey HiLoader Track-Cleaner to pick up spilled coal from inter-track spaces of four or five tracks, and then to place this salvage coal between the rails of one track until it is full (as shown above). A work train is then called in and the coal is loaded into hopper cars at the rate of five to eight 50-ton to 70-ton cars per day. By using this method the Athey Track-Cleaner can work by itself until it has enough coal in one track to load at its full capacity, up to 10 cubic yards per minute.

Many major railroads and belt lines load all loose materials on their tracks and from stockpile with Athey Force-Feed HiLoader Track-Cleaners. They agree that Athey is the Track-Cleaner with the

highest production and lowest costs. Ask your Athey-Caterpillar Dealer to show you movies on this machine. Better still ... make arrangements with him to see one at work.

**ATHEY PRODUCTS CORPORATION • 5631 West 65th St., Chicago 38, Illinois**

**SEND FOR THIS BOOKLET TODAY!**



**IT'S NEW!**

Athey Products Corporation, Dept. RT-6  
5631 West 65th Street, Chicago 38, Illinois

Gentlemen: I would like this additional information on the Athey Track-Cleaner:

- ☐ Booklet ☐ To see movie.  
☐ To see Track-Cleaner in operation.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

RAILROAD \_\_\_\_\_

# KRAFTBILT

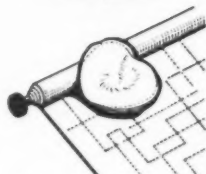
*Lifetime*

# MAP CABINETS



*hold more  
take less space*

One Kraftbilt Vertical Rollfile holds 96 rolled maps. One unit of a Kraftbilt Horizontal Rollfile holds 112 rolled maps! Made specially for all types of rolled charts and plans, tracings, blue prints, maps, drawings. Of all-steel, fire-resistant construction. Disappearing doors and drawers mounted on ball-bearings. Kraftbilt cabinets lock out dust, moisture, insects. Send for Bulletin 352-B for details.



Kraftbilt all-plastic snap-on Map Sticks take the work out of map handling. They are quicker, lighter, stronger. And Kraftbilt Map Weights act as extra hands in eliminating the use of thumb tacks. Just toss 'em on!



*Ross-Martin Company*

BOX 800, P. • TULSA 1, OKLA.

# HIGH LIFT AGRICAT

HYDRAULIC



**SAVES**

**TIME**

**MANPOWER**

**EXPENSE**

Here's the answer wherever economy in light earth-moving operations is essential! The new High Lift Hydraulic "Agricat" gives low-cost, low-maintenance loading... plus superior performance in those cramped, hard-to-get-at-places. Its five cubic foot capacity permits

loading a 2-yard dump truck in ten minutes. Steel welded construction, with high carbon cutter bar and ripper teeth, means years of trouble free service. See the new High Lift Hydraulic "Agricat" now! Sales job demonstrations are available by appointment.

**EARL H. PENCE & CO., INC.**

2150 Washington Avenue • San Leandro, California • TRinidad 2 4474

## Advertisers IN THIS ISSUE

A		D		H	
Aluminum Company of America	526	DeVilbiss Company, The	585	Holan, J. H., Corporation	593
Agency-Fuller & Smith & Ross, Inc.		Agency-Brooke, Smith, French & Dor-		Agency-The Carpenter Advertising Company	
American Lumber & Treating Co.	584	Agency-Brooke, Smith, French & Dor-			
Agency-Fuller & Smith & Ross, Inc.		Dow Chemical Company, The	532		
Atthey Products Corporation	601	Agency-MacManus, John & Adams, Inc.			
Agency-Hosler Advertising, Inc.		Du Pont, E. I., De Nemours & Co., Inc.	530		
		Agency-Batten, Barton, Durstine & Os-			
		born, Inc.			
B		E		I	
Barber-Greene Company	578	Eaton Manufacturing Company		International Harvester Company	525
Agency-The Buchen Company		Agency-The Jay H. Maish Company		Agency-Leo Burnett Company, Inc.	
Beall Tool Division of Hubbard & Co.	592	Electric Tamper & Equipment Co.	589		
Agency-Oliver Life Advertising Agency		Agency-Stevens, Inc.			
Bethlehem Steel Company	523				
Agency-Jones & Brakeley, Inc.					
Blaw-Knox Company, Blaw-Knox Equipment					
Division	597				
Agency-Russell T. Gray, Inc.					
Bowser, Inc.	536				
Agency-Willis S. Martin Company					
Brice Hayes Co., The	586				
C		F		J	
Caterpillar Tractor Co.	527, 604	Fairbanks, Morse & Co.	599	Jordan, O. F., Company	587
Agency-N. W. Ayer & Son, Inc.		Agency-The Buchen Company		Agency-Marsteller, Gebhardt and Reed, Inc.	
Cullen-Friedstedt Co.	596	Fairmont Railway Motors, Inc.	546		
Agency-Ross Llewellyn, Inc.		Agency-MacManus, John & Adams, Inc.			
		G		K	
		General Electric Company	548	Kennedy, H. T., Company, Inc.	575
		Agency-G. M. Basford Company		Agency-Davis-Parsons, Inc.	
				L	
				Layne & Bowler, Inc.	543
				Agency-Greenhaw & Rush, Inc.	
				Le Tourneau-Westinghouse Company	534-535
				Agency-Andrews Agency, Inc.	
				Lewis Bolt & Nut Company	603
				Agency-Ruthrauff & Ryan, Inc.	

# PLATFORMS

in LESS time—at LOWER cost!



FORMED WITH

## Sonotube® LAMINATED Fibre Forms

PAT. APP. FOR

For one time use, Sonotubes save you money in forming concrete columns, posts, piles, culverts, etc. Ideal for economical railroad construction and maintenance. Saws like wood to exact lengths needed. Sizes 3" to 24" I.D., up to 24' long. Immediately available.



Write for Complete Information and Prices

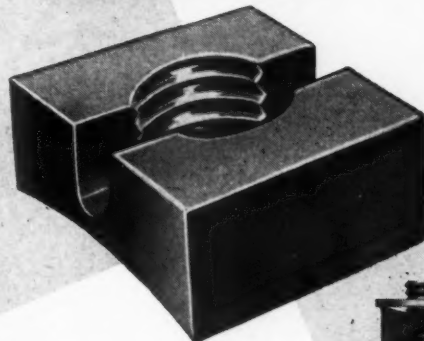
### SONOCO PRODUCTS COMPANY

Construction Products Division  
GARWOOD, N. J. HARTSVILLE, S. C. MYSTIC, CONN.  
LOS ANGELES, CAL. BRANTFORD, ONT.

DISTRIBUTORS WANTED



# Lewis LOKTITE NUTS



Specify Lewis Loktite Speed Holding Nut #2 for positive lock . . . no other nut required. Equals tensile strength of bolt. Trimmed sides provide a close wrench fit. For Double-Life, fewer replacements, specify Hot-Dip Galvanized finish!



Side view, reduced, showing areas of friction lock.

See your Lewis representative, or contact factory for further details.



**BOLT & NUT COMPANY**  
504 Malcolm Ave. S. E.  
MINNEAPOLIS 14, MINNESOTA



**M**  
Maintenance Equipment Company . . Front Cover  
Agency—Van Auken, Ragland & Stevens  
Mall Tool Company . . . . . 598  
Agency—The Advertising Corporation  
Matisa Equipment Corporation, The . . . . . 538  
Agency—W. S. Kirkland, Advertising  
Mid-West Forging & Manufacturing Co. . . . 594  
Agency—Campbell-Sanford Advertising Company

**N**  
National Aluminate Corporation . . . . . 541  
Agency—Armstrong Advertising Agency  
National Blue Print Company . . . . . 588  
National Lock Washer Company, The . . . . .  
Inside Back Cover  
Agency—Kiesewetter, Baker, Hagedorn & Smith, Inc.  
Nordberg Mfg. Co. . . . . 531  
Agency—Russell T. Gray, Inc.

**O**  
Orton Crane and Shovel Company . . . . . 595  
Agency—W. S. Kirkland, Advertising  
Oxweld Railroad Service Company, a Division of Union Carbide and Carbon Corporation . . . . . 529  
Agency—J. M. Mathes, Inc.

**P**  
Pacific Coast Borax Co. . . . . 600  
Agency—Howard M. Irwin and Associates

Pence, Earl H., Co., Inc. . . . . 602  
Agency—Small and Gautreaux  
Portland Cement Association . . . . . 581  
Agency—Roche, Williams & Cleary, Inc.

**Q**  
Q and C Co., The . . . . . 597

**R**  
Racine Hydraulics & Machinery, Inc. . . . . 537  
Agency—The L. W. Ramsey Advertising Agency  
Rails Company, The . . . . . 577  
Railway Track-work Co. . . . . 587  
Agency—O. S. Tyson and Company, Inc.  
Ramapo Ajax Division, American Brake Shoe Company . . . . . 545  
Agency—The L. W. Ramsey Advertising Agency  
Ramset Fasteners, Inc. . . . . 590  
Agency—Fuller & Smith & Ross, Inc.  
Reade Manufacturing Co., Inc., The . . . . . 573  
Ross-Martin Company . . . . . 602  
Agency—Louis A. Brandenburg, Advertising

**S**  
Sonoco Products Company . . . . . 603  
Agency—Bennett Advertising, Inc.  
Speno, Frank, Railroad Ballast Cleaning Co. Inc. . . . . 597  
Agency—Laux Advertising, Inc.  
**Z**  
Syntron Company . . . . . 576  
Agency—Servad, Inc.


**T**  
Tapecoat Company, The . . . . . 596  
Agency—Fred H. Ebersold, Inc.  
Templeton, Kenly & Co. . . . . 591  
Agency—Glenn, Jordan, Stoetzel, Inc.  
Texas Company, The . . . . . Back Cover  
Agency—Erwin, Wasey & Company, Inc.  
Thew Shovel Co., The . . . . . 528  
Agency—Hosler Advertising, Inc.  
Timken Roller Bearing Company, The . . . . 533  
Agency—Batten, Barton, Durstine & Osborn, Inc.

**U**  
Union Carbide and Carbon Corporation, Oxweld Railroad Service Company . . . . . 529  
Agency—J. M. Mathes, Inc.  
United States Motors Corp. . . . . 587  
Agency—Geer-Murray Company

**W**  
Warner & Swasey, Gradall Division . . . . 524  
Agency—The Griswold-Eshleman Co.  
Woolery Machine Company . . . . . 583  
Agency—W. S. Kirkland, Advertising

**Z**  
Zone Company, The . . . . . 582  
Agency—Harry Schneiderman, Inc.





# "Ideal" for your equipment, too!

A Cat D315 Diesel powers this Bucyrus-Erie crane, owned by the Bush Terminal Railroad, Brooklyn, N.Y. The crane is self-propelled, has a 29' magnet to load scrap metal from stockpile to railroad cars. Left: Ohio locomotive crane powered by a D13000.

One of the best features of Caterpillar Diesel Engines is their ability to do a good job with almost any yard equipment. For instance, the Bush Terminal Railroad Co., Brooklyn, N. Y., powers its Bucyrus-Erie magnet crane with a D315, and its Ohio locomotive crane with a D13000. Says E. W. Jud, general superintendent, "We've picked the ideal combination of power and equipment for the job."

So it goes throughout the industry. All leading manufacturers can supply Cat\* Engines for their equipment. Caterpillar has a *complete* line of engines and electric sets—12 sizes ranging up to 500 HP and 315 KW. They use a low-cost No. 2 furnace oil without fouling. And don't

forget: Caterpillar is known the world over for its long life, dependability and simplicity of operation and construction.

See your dealer. Ask him about standardized equipment for on- and off-track work . . . about efficient Cat service . . . and be sure to ask for on-the-job proof!

CATERPILLAR, Peoria, Illinois.

## CATERPILLAR\*

\*Both Cat and Caterpillar are registered trademarks—©

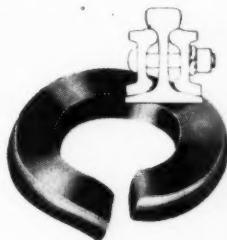
**NAME THE DATE...  
YOUR DEALER  
WILL DEMONSTRATE**

Visit the Caterpillar Exhibit at the Atlantic City Convention.

When track is planned and laid with utmost care, it stands up as a splendid tribute to management. Fine roadbeds are not only safer, but in the long run they are more economical. They require less frequent tightening and repair work. The cost of up-keep is far less.

**IMPROVED HIPOWERS**

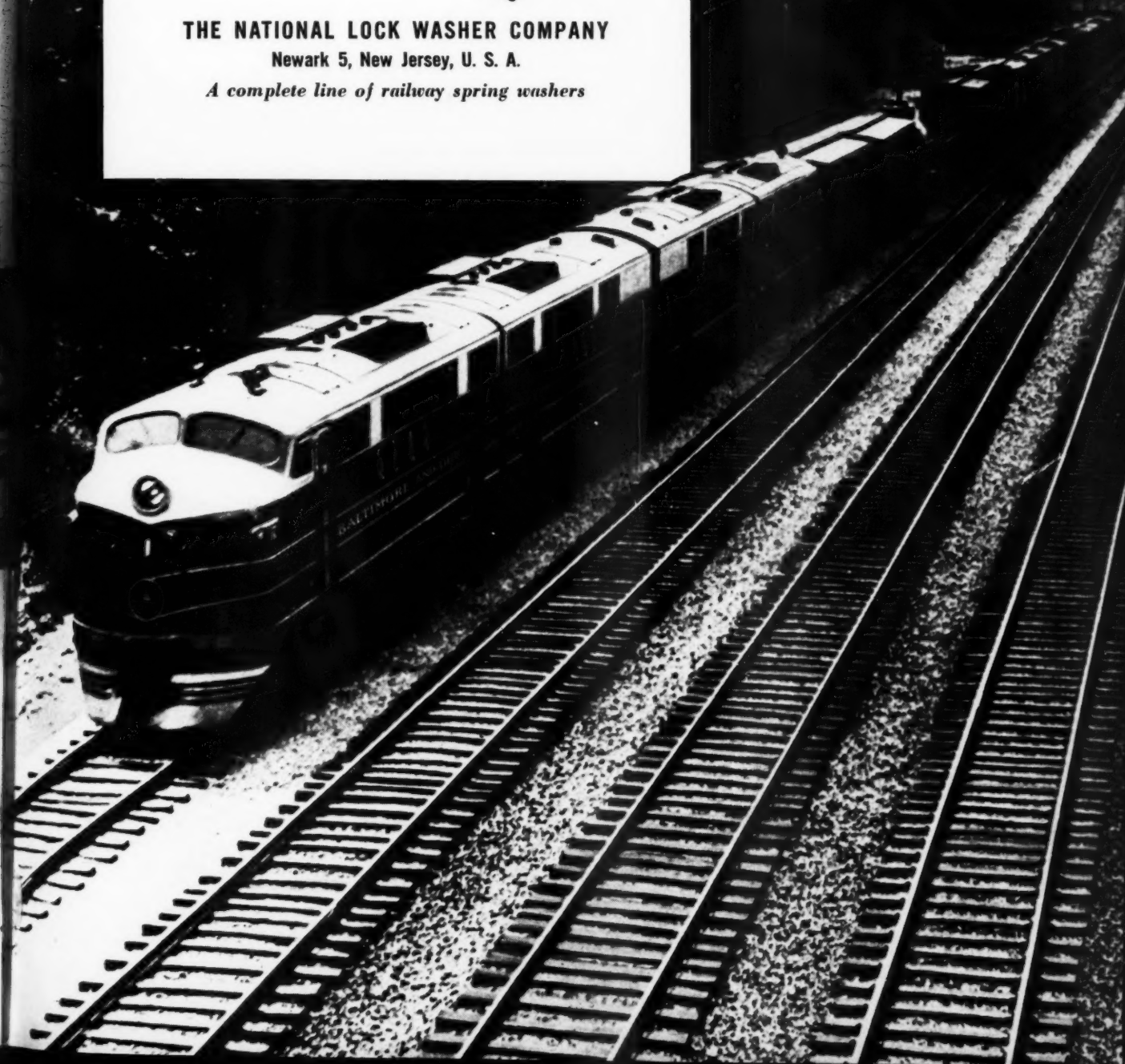
**IMPROVE TRACK**



**THE NATIONAL LOCK WASHER COMPANY**

Newark 5, New Jersey, U. S. A.

*A complete line of railway spring washers*



# HOW TO *SAVE* *SUBSTANTIALLY* ON BRIDGE PROTECTION



**C**omparative figures, based on the experience of leading railroads, show that bridges can be protected with *Texaco Metal Preservative* at a substantial saving. Not only is material cost much less, but the work can be done in about one-third the time. *Texaco Metal Preservative* provides long-lasting, effective protection against rust and corrosion. It goes on easily with either brush or spray gun — and *no extensive wire brushing or chipping is necessary*. When sprayed on, much less scaffolding is needed. *Texaco Metal Preservative* is equally effective on stringers, which catch brine from refrigerator cars.

A Texaco representative will gladly give you full details. Just call the nearest Railway Sales Office in New York, Chicago, San Francisco, St. Paul, St. Louis or Atlanta. Or write The Texas Company, *Railway Sales Department*, 135 East 42nd Street, New York 17, N. Y.



## **TEXACO** Metal Preservative



